

ROAD & TRACK[®]

AUGUST 2015

THE SUPERCAR ISSUE

NEW FERRARI 488 GTB TAKES LESSONS FROM A LEGEND
LAMBORGHINI AVENTADOR SV | CHRIS HARRIS ON THE PORSCHE GT3 RS
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THE COMPARISON**FERRARI 488 GTB
& 288 GTO**

For our first drive of the new turbo berlinetta, we brought along an old friend.

BY CHRIS CHILTON

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FIRST DRIVE**LAMBORGHINI
AVENTADOR
LP 750-4 SV**

Never driven a supercar before? This is a great place to start.

BY ZACH BOWMAN

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FIRST DRIVE**PORSCHE
911 GT3 RS**

Character, ability, and desirability in spades. But still no manual gearbox.

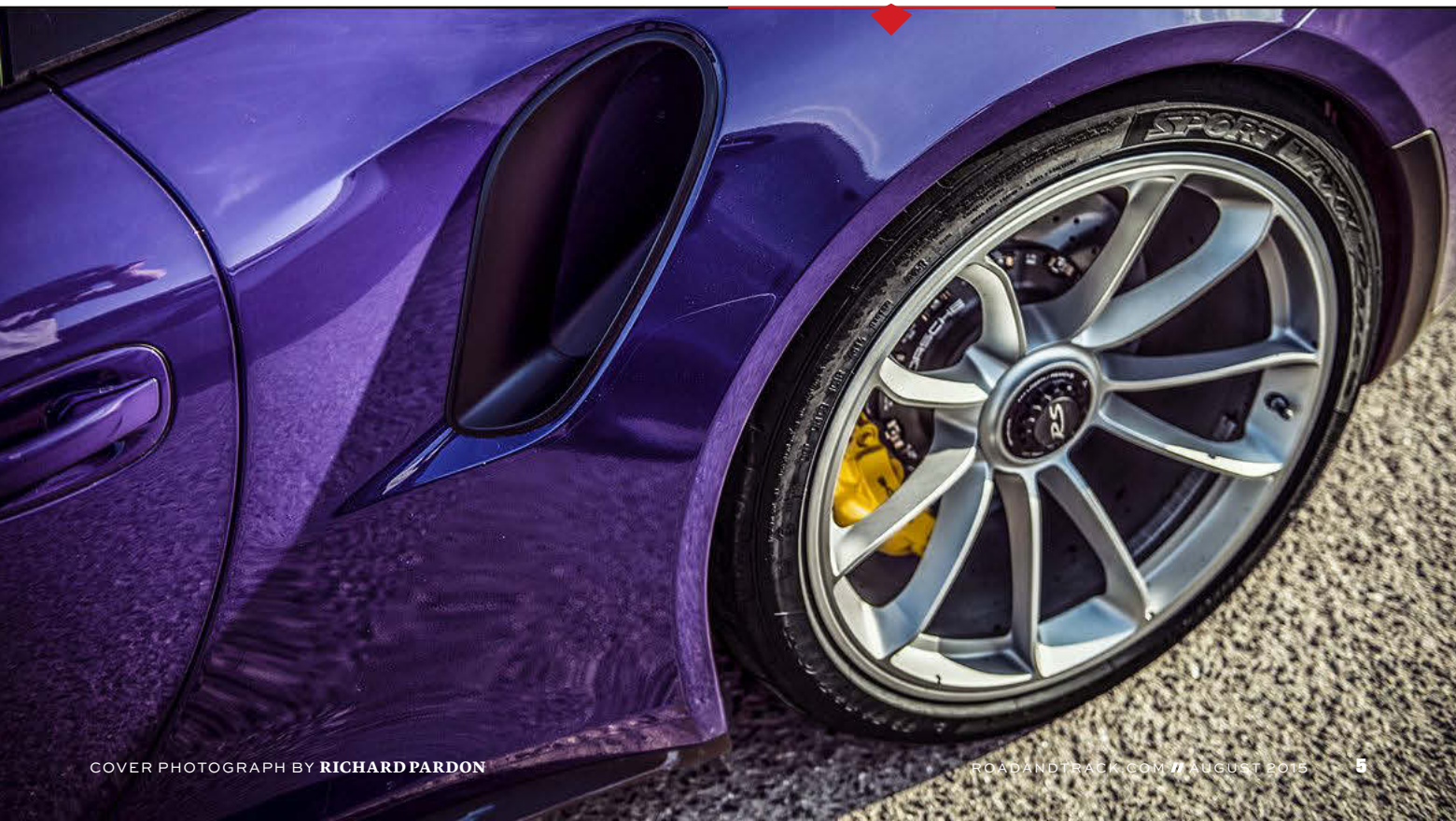
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THE TRACK TEST**2015 FERRARI
LAFERRARI**

The fangs come out on Ferrari's masterpiece, the quickest road car we have ever tested.

BY LARRY WEBSTER



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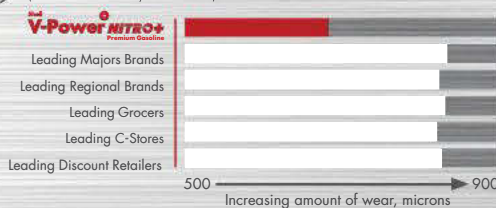


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CAPTURING THE LIFE AT SPEED

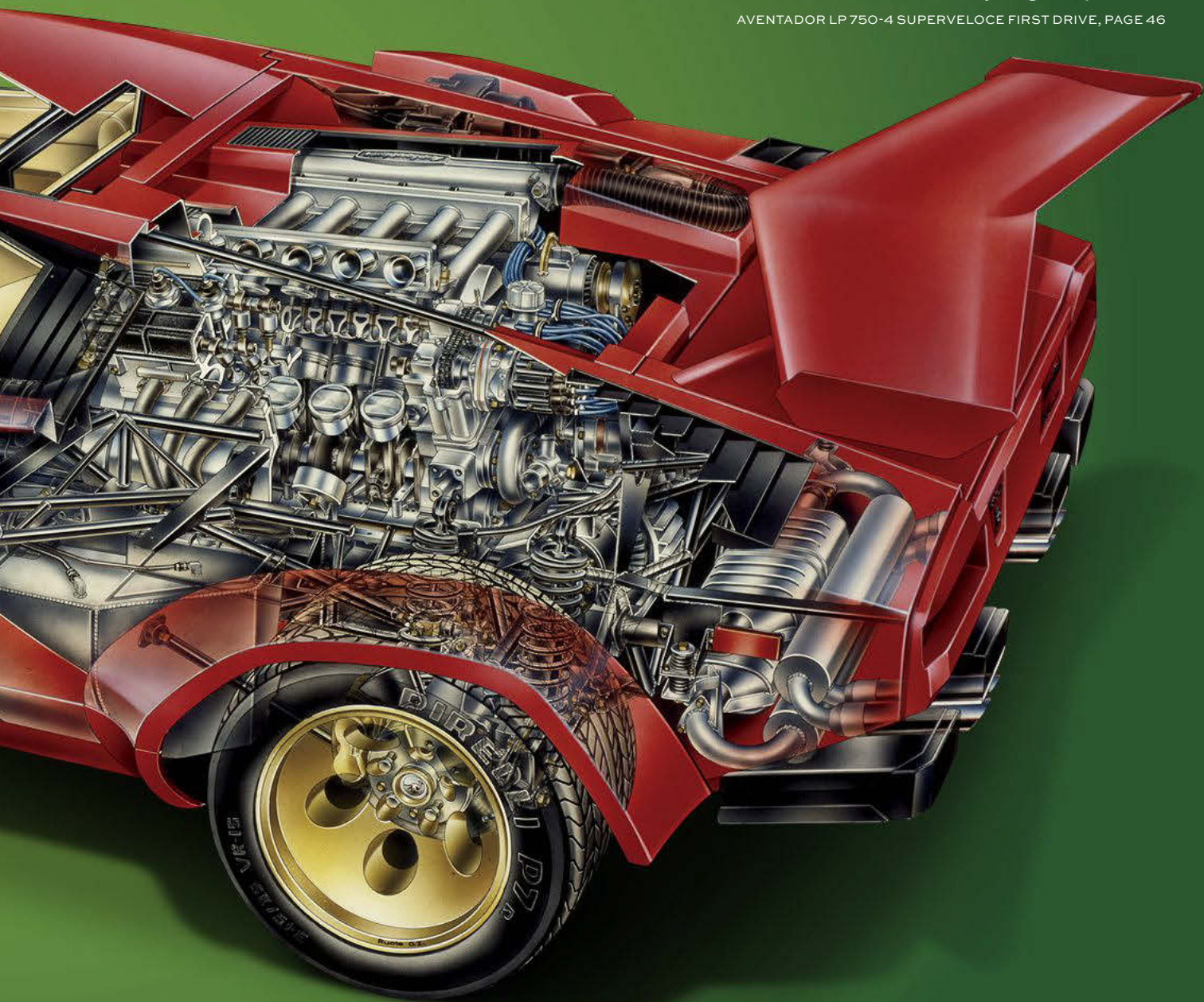


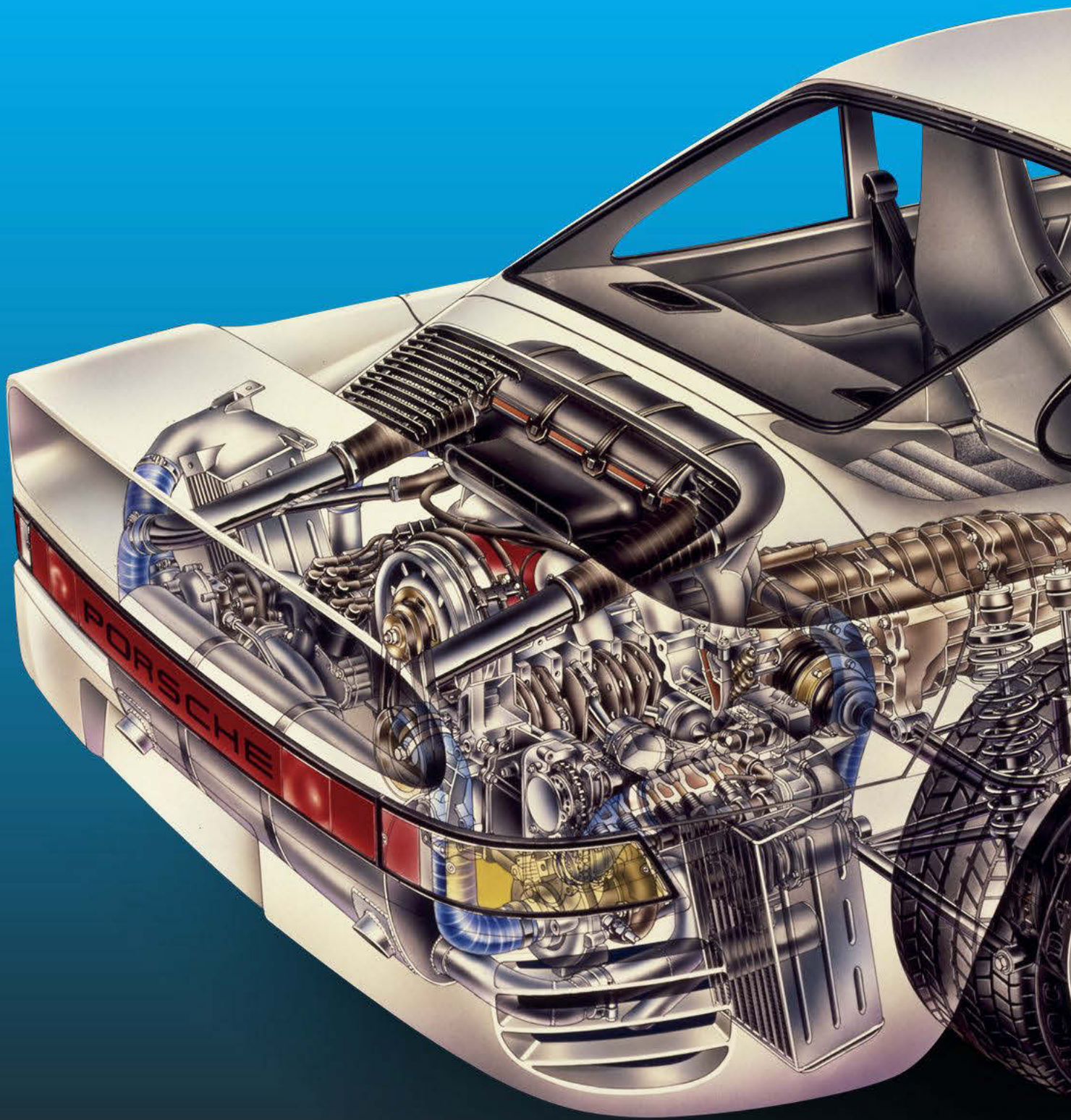
ILLUSTRATIONS BY DAVID KIMBLE

1986 LAMBORGHINI COUNTACH

The supercar. Born of the Sixties, reared in the Seventies. But it wasn't until the Eighties, an era defined by indulging excess simply for excess' sake, that a blueprint for the modern supercar emerged. It called for more. Louder pipes. Fatter tires. Bigger wings. Here, we celebrate Eighties landmarks from Porsche, Ferrari, and, of course, Lamborghini, with archival cutaway drawings. The Countach 5000 QV is an archetype: four-valve V-12, six-figure sticker price, styling like a Grumman Autobot. Three decades later, the Aventador SV doesn't stray far. Good, we say. Life needs cooler doors, more alarming sensations. We need more Countachs and F40s and 959s, exotica capable of setting the world on fire. Because anything less is just a car.

AVENTADOR LP 750-4 SUPERVELOCE FIRST DRIVE, PAGE 46







Go

1986 PORSCHE 959

Motorsport magazine called the 959 a “potpourri of technical exercises that will be applied to the range over the next 10 years.” More like 30. Porsche’s modern adaptive suspension, water-cooled heads, and hollow-spoke center-lock wheels all started here. The 959 proved the classic 911 shape, a high-revving flat-six, and that stubborn rear-engine layout could hover in the supercar stratosphere. The contemporary Turbo S is a spiritual successor, but every great 911 (including the new GT3 RS) has a pinch of the 959’s magic.

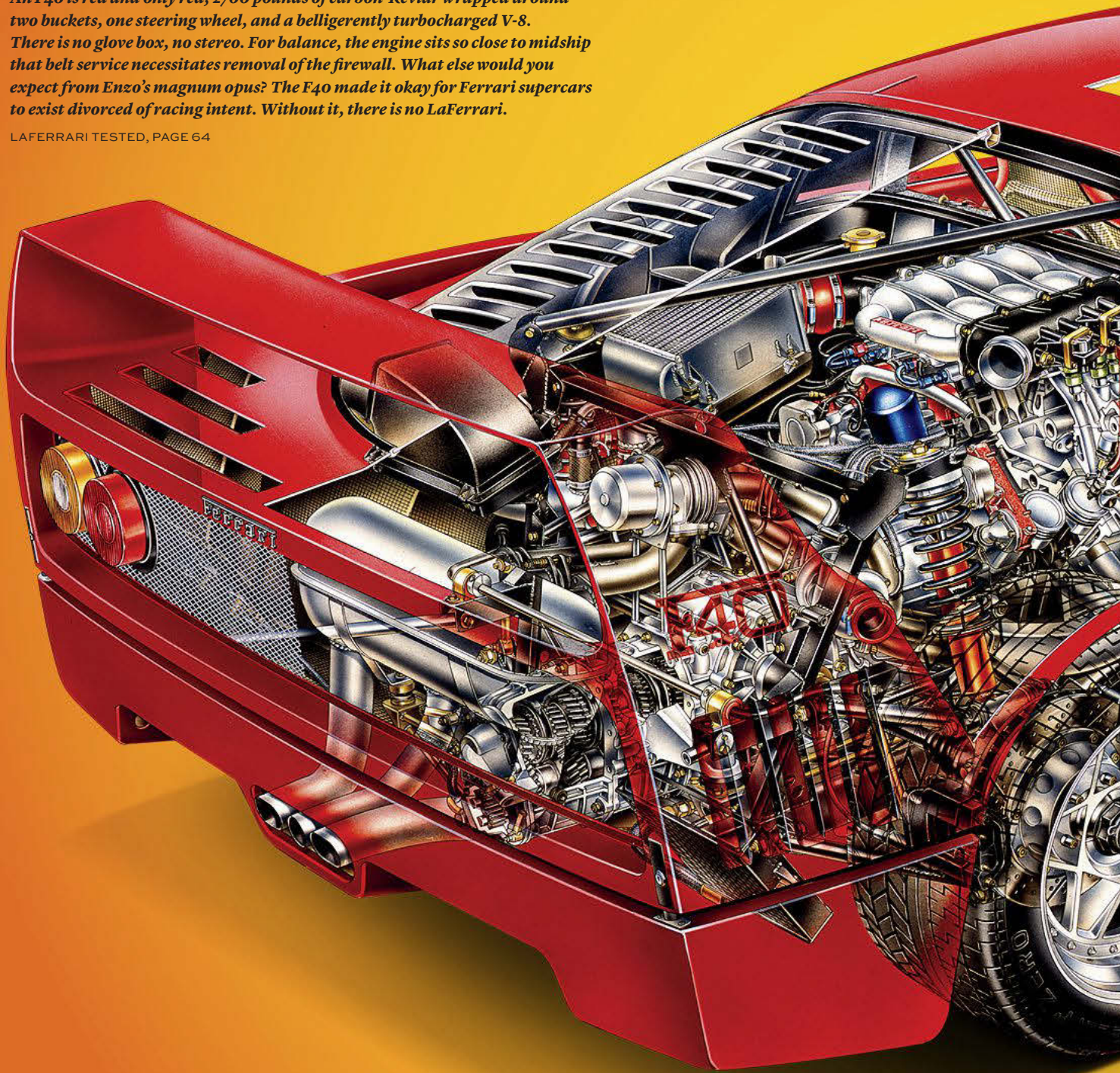
911 GT3 RS FIRST DRIVE, PAGE 56

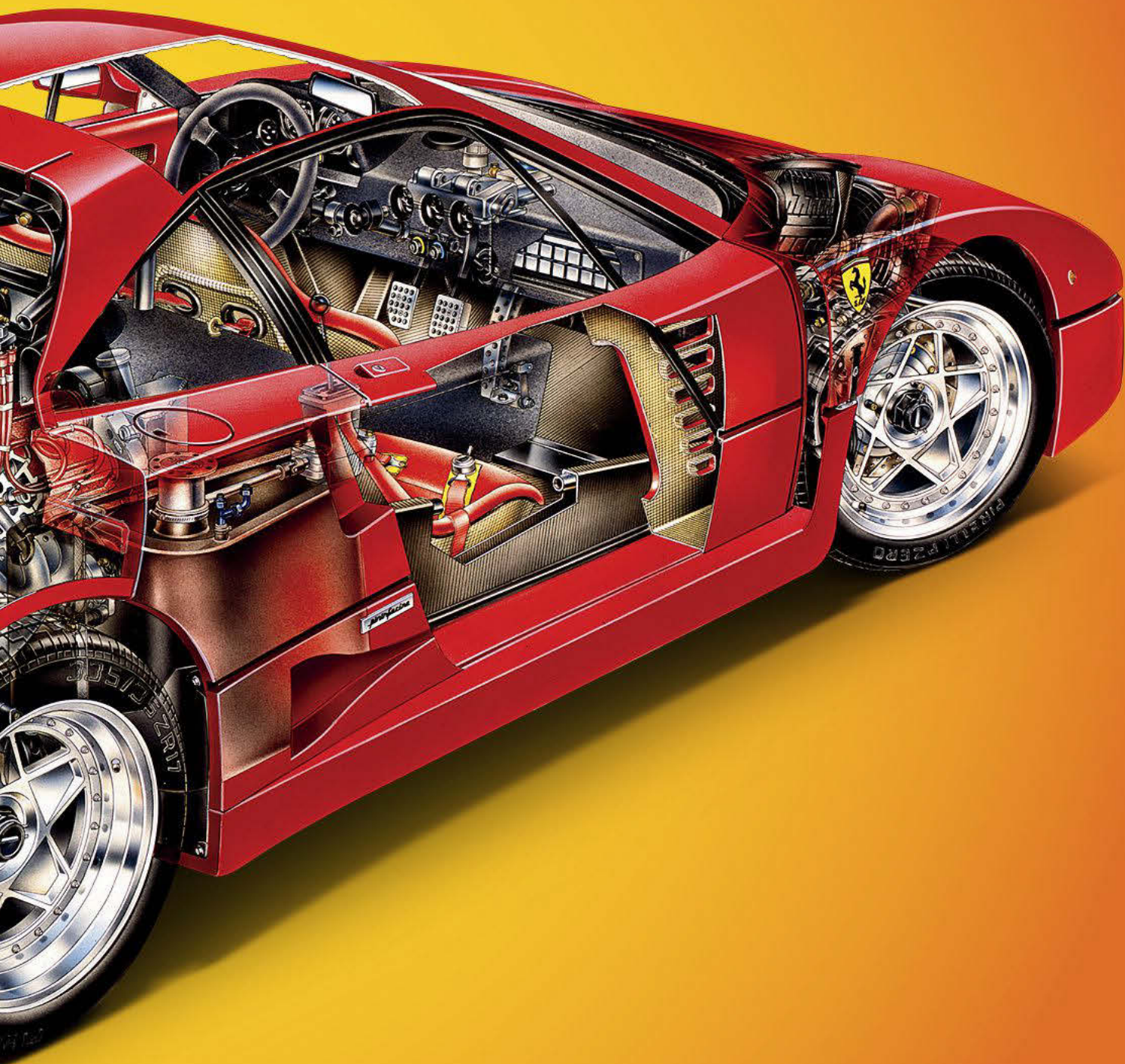
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1989 FERRARI F40

An F40 is red and only red, 2700 pounds of carbon-Kevlar wrapped around two buckets, one steering wheel, and a belligerently turbocharged V-8. There is no glove box, no stereo. For balance, the engine sits so close to midship that belt service necessitates removal of the firewall. What else would you expect from Enzo's magnum opus? The F40 made it okay for Ferrari supercars to exist divorced of racing intent. Without it, there is no LaFerrari.

LAFERRARI TESTED, PAGE 64





THE STORY OF THE 2016 TRAVERSE

AS TOLD BY TWO OF ITS AUTHORS

We got to sit down with two of the minds behind the 2016 Chevrolet Traverse to give you the inside scoop on the SUV, from one car fanatic to another. We were especially curious about how a national champion race car driver/engineer came together with a safety engineer who holds almost 50 patents to apply their individual expertise to the Traverse.





JACK BENNETT

SENIOR PROGRAM
ENGINEERING MANAGER

What can an engineer who's a winning race car driver bring to an eight-passenger¹ SUV?

When I was the 1996 Formula 440 national champion for SCCA, I ended up redoing my car front to back using my engineering expertise. Working on your own project with your own hands in your own shop makes you visualize what you can do with materials and how they affect each other. The ability to visualize interrelationships in 3-D had a huge effect on the design of the Traverse.

What led to the invention of the Smart Slide[®] seat?

Creating a third-row seat with enough leg and shoulder room for adults is one challenge. Easily getting from one seat to the other is another challenge. So we created a seat in the Traverse called the Smart Slide seat that can move out of the way with a single motion and leave a big opening. You can pretty much walk into the third row. We decided to focus on that feature, and at that time, GM was the only manufacturer that had that capability.

How is the Chevrolet Traverse a vehicle that was designed from the "inside out"?

What matters to the customer in a vehicle like this is passenger seating and accommodation but not making it feel big. It doesn't look or drive as big as it is. We set the Traverse up to have capability for up to eight-passenger seating: two people in the first row, three in the second and three in the third. We also wanted the seats to fold in such a way that you could mix people and cargo in any combination. Traverse has best-in-class cargo space. For me, that means five people and a dog headed off to the lake for a long weekend.

SEE IT IN ACTION AT CHEVY.COM/TRaverse-CARGO

"Tinkering with race cars taught me how to visualize in three dimensions, which helped create Chevrolet Traverse from the inside out."

Jack Bennett

SENIOR PROGRAM ENGINEERING MANAGER



SCOTT THOMAS

SENIOR STAFF ENGINEER,
ADVANCED RESTRAINT SYSTEMS

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Why was it placed in the driver seat?

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SEE IT IN ACTION AT CHEVY.COM/TRaverse-SAFETY



¹ Standard on LS and 1LT. Available on 2LT. LTZ seats 7. ² Air bag inflation can cause severe injury or death to anyone too close to the air bag when it deploys. Be sure every occupant is properly restrained. Always use safety belts and child restraints. Children are safer when properly secured in a rear seat in the appropriate child restraint. See the Owner's Manual for more information.

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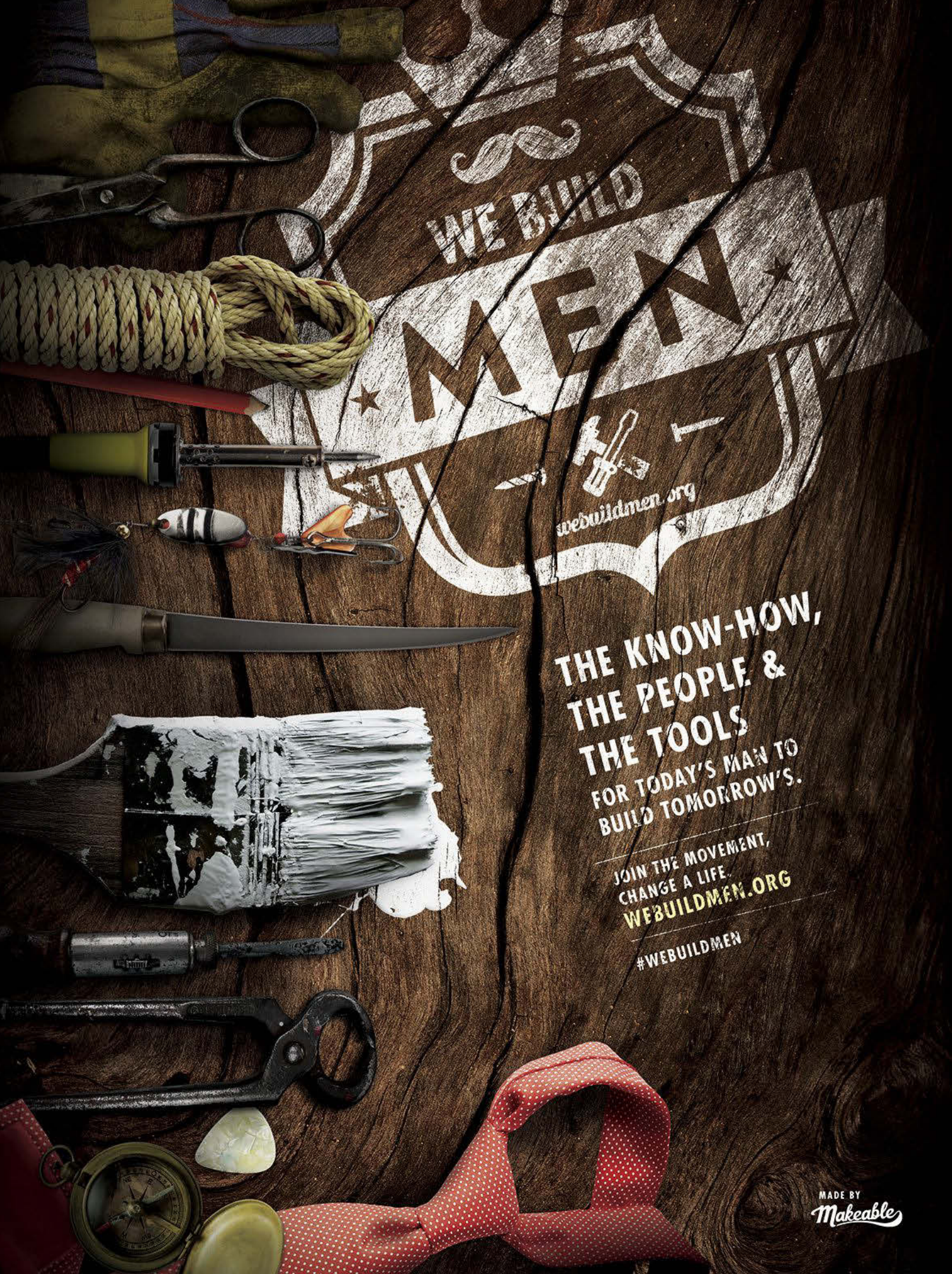
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Letters

REACTIONS TO R&T'S MAY MOTORSPORT ISSUE. LIGHT 'EM UP.

Dear R&T,

The cover of the Motorsport Issue proves that the Scuderia Cameron Glickenhaus SCG003 ["The Throwback"] is clearly the next Batmobile. Note the shape of the nose, fender fins, and, well, everything else. Paint it black, put on the winged Dark Knight emblem, and it's ready to destroy some bad guys.

EUGENE A. SCANLAN, SECHLT, BRITISH COLUMBIA

I can sympathize with Mr. Glickenhaus's pain: being born into a wealthy family, having to endure uncomfortable exotics the past four decades, and not having a dependable supercar for commuting. Thankfully, for \$2.4 million, we can all work on the one he's built with our Craftsman tools.

PAUL M. BACA
ALBUQUERQUE, NEW MEXICO

ADDITION BY SUBTRACTION

I applaud the methodical and scrupulous way Jack Baruth wrote about the new Mazda MX-5 Miata ["Master Class"]. His prose had me excited, right there next to the car, jumping up and down to drive it. Japanese design is about simplicity, function, and purity. Most automakers just add more power, gadgets, and distracting junk. Mazda did not give in. It created a real sports car: purposeful, refined, and instinctive.

ALLEN WESTON
CHEEKTOWAGA, NEW YORK

Well done, Mazda. Sports cars *can* still be great. Delivering thrills at an affordable price may not always be hugely profitable, but it creates a dedication to the marque.

AL ABDULLAH
AFTON, MISSOURI

When I looked at the new MX-5, I scoffed. Then I saw the power figures and laughed out loud: 129 hp, 111 lb-ft. It's like Mazda stole the blueprints

from the Honda S2000, except that the Miata puts out 100 hp less. "Master Class"? Hardly. Honda had this car beat 15 years ago.

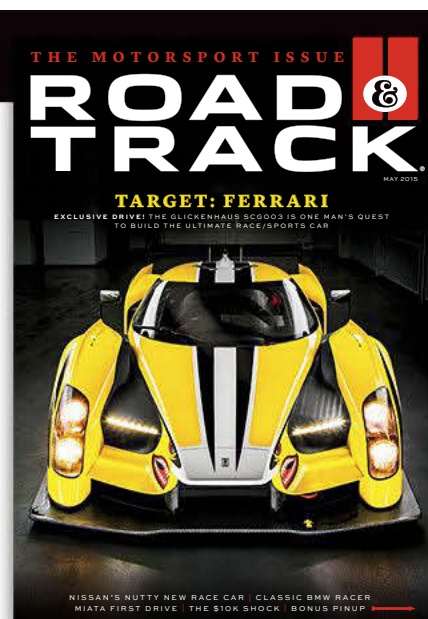
R. LEE DOUGLAS
MEADOW LAKE, SASKATCHEWAN

The U.S.-spec Miata will offer 155 hp and 148 lb-ft of torque. It also weighs 15 percent less than the S2000, but that's not the point. Roadsters are about driving experience, something greater than any power curve or curb weight.

PARTY AT PEBBLE

Wonderful report on racing at Monterey ["Always Meet Your Heroes"]. I spent weekends at Laguna Seca for nearly 30 years, and the Reunion, née Historics, had some of my favorite races. I've since moved away, and I miss it dearly. Thanks for the memories; the writing was as pin-sharp as the California weather you talk about.

DAN NEU
WILMINGTON, NORTH CAROLINA



I have four notes on "Always Meet Your Heroes." (1) I appreciate well-written, long-form pieces with twists of phrase to put me there. (2) Sam Smith's story was just that. (3) Okay, so he should have said something about the BMW 2002's iconic taillights because, well, they are perfect. (4) At 7000 rpm, the engine sounded "like a family of chain saws with a drinking problem." Ha! See note one.

DOUGLAS UDELL
MILWAUKEE, WISCONSIN

BACK TO THE FUTURE

Reading your article about Ben Bowlby and his LMP ["Nissan's Mad Science"], I was reminded of another innovative race-car builder: Jim Hall. His Chaparral cars also challenged the establishment with new and radical ideas. Some of the designs were outrageous, and some failed, but they were always exciting.

JIM THOMAS
CLIO, MICHIGAN

Fantastic analogue.

I thoroughly enjoyed Josh Condon's investigation into Mazda's racing program ["The Short, Brutal Life of a Racing Piston"]. The writing drew me in, and the article explained the team's inner workings, details of how the engine was taken apart, and what caused the ultimate failure. Mesmerizing.

OTTO H. ACHENBACH
EAGLE, IDAHO



EDITOR'S LETTER BY LARRY WEBSTER

THE FIRST TIME I TESTED A LAMBORGHINI was 15 years ago, when I was the low man on *Car and Driver's* tall totem pole. The top of the shifter broke off going into fourth at 120 mph. I had to affix a pair of Vise-Grips to get home from the track. That followed a Ferrari Testarossa modified with twin turbos that ate drive belts before it drained the gas tank. Only now, thanks to hindsight, do I understand how a junior staffer nabbed such seemingly plum assignments: The senior guys knew what was coming and ran.

In the years since, those automotive peacocks have morphed from showpieces to bona fide sports cars. I was reminded of this during a track day at Mid-Ohio last month, when a succession of exotics whizzed by my terminally slow Formula Ford. Come late afternoon, I needed to tighten a CV joint and searched the paddock for someone to lend me the correct tool. I assumed one of those supercar owners, all of whom had come with trailers, would have what I needed—typically, exotic haulers are decked out with tile floors, televisions, and the full Snap-on catalog.

But trailer after trailer was empty, nothing more than a bare box to keep the car out of the elements. I asked how the owners managed without tools and, in return, got quizzical looks. The cars, they said, handled track abuse just fine, and they wouldn't know what to do if something broke anyway. They'd towed them to Mid-O because they preferred the comfort of their dualie

Joy behind the wheel trumps numbers, but the supercar's nature courts quantification.

pickups. And why log highway miles on track cars?

If owners running exotics at speed on a racetrack isn't proof that we're in the Age of the Supercar, consider the sheer volume: In the span of two weeks, three hallowed manufacturers—Porsche, Lamborghini, and Ferrari—invited us to drive three new supercars. Hence, our second annual Supercar Issue.

The latest GT3 RS is the first 911 RS without a manual transmission. Over at Ferrari, the 488 GTB replaces the 458 Italia this year. Consequently, a new twin-turbo V-8 supplants the maniacal, naturally aspirated 9000-rpm mill that is, in my mind, the best-sounding engine ever made. Lamborghini is still playing to supercar tradition, for now at least, with a turboless 740-hp mid-engine hellion, the V-12 Aventador LP 750-4 Superveloce.

We believe the joy behind the wheel trumps raw numbers, but the supercar's very nature courts quantification. Which is why we revisited the Ferrari LaFerrari. We were the first outsiders allowed to mount test gear on Maranello's \$1.3 million steed, and woof, the thing's a beast. Check out the data on page 71, then see where the LaFerrari fits in the pantheon of supercars on page 98.

Supercars are the automotive goalposts. They chart a course for performance cars, shepherd in new technology, and showcase what the world's most talented engineers and designers are capable of creating. That is worth celebrating. ■

Letters CONT.

A NEW FORMULA

Marshall Pruett's column on racing ["First World Problems"] was right on target. I've been an F1 fan since the Fifties and am disgusted by the current micromanagement, ridiculous rules, and ever-changing specifications. Bernie Ecclestone seems to have no interest in the sport's history and beauty, only in how to further pad his (already stacked) bank account. F1 will never be as good as it once was until we remove 90 percent of the engineering restrictions, 90 percent of the silly rules, and 100 percent of Bernie.

A. T. STRONG
FORT MYERS, FLORIDA

GENERATION GAP, BUMP DRAFT

When I approach younger NASCAR aficionados and ask about displacement, fuel-delivery type, or differences between the Chevy, Toyota, and Ford engines, I'm greeted with blank stares. I return the look when they ask me which driver I prefer. After reading Bob Lutz's column, "The Racing Dilemma," I see that I'm not alone.

STU HARTMAN
GREENSBURG, PENNSYLVANIA

IT CAME FROM THE ARCHIVES

I loved the motorsport-edition Road Test Summary. The first thing I did was see if the Benetton-BMW F1 car was included. Sure enough, it was. I credit *R&T's* 1987 cover story for inspiring my lifelong interest in international circuit racing and the incredibly rich history therein. Thank you, and keep it coming!

ERIC WATERS
NEW PROVIDENCE, NEW JERSEY

CORRECTION Due to an editing error, June's *Go Lutz Yourself* stated that BMW developed an 18-cylinder engine for potential use in Focke-Wulf fighter jets. They were fighter planes, not jets. We regret the mistake but enjoyed reading your colorful missives alerting us to it.

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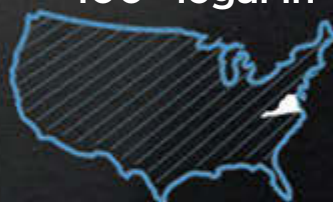
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Rules and Brooks

A BRIGHT LIGHT GOES OUT.

SMITHOLOGY BY SAM SMITH

WHEN I HEARD DENISE McCLUGGAGE had died, it was 8:45 p.m. on a Wednesday in May. Thanks to the vagaries of magazine publishing, these words, written that night, won't see print for weeks.

You're not supposed to do this now, with the immediacy of the Internet. But Denise was a fan of doing things you're not supposed to. So there.

If you Google her, you find endless shots of a petite woman with short hair, laughing. Mostly surrounded by sports cars. A Porsche 550 at Montgomery in 1957. A Lotus Eleven in Nassau in '58. In a single-piece blue driving suit, bright Kodachrome, talking to an impossibly young Stirling Moss. Born in Kansas, her first real job was at the *San Francisco Chronicle* in the 1950s, but she didn't hit her stride until a few years later, covering sports for the *New York Herald Tribune*. She became known for doing what she wrote about, because, as she once put it, why not? That was initially downhill skiing. Then racing. Two magnets for rhythm and grace.

Why wouldn't one lead to the other? Who has a career like that anymore? In 1958, Denise was nominated to the Le Mans team of Luigi Chinetti—the man who brought Ferrari to America—only to be turned down because the race was invitational, and the ACO said it didn't "choose to invite women." In 1961, she won the GT category at Sebring in a Ferrari 250. A class win at the Monte Carlo Rally in 1964, in a Ford Falcon. Fifth at the 1960 Watkins Glen Grand Prix, the only woman in the race. This is far from the whole list. Women were shuffled to the side in those years, often in ridiculous "ladies' races," if they were even allowed to compete. And yet she went everywhere, did everything.

One picture stands out in Google. Black and white. Five guys in the early Sixties, around a woman, grinning in a white turtleneck. She glows like a streetlight on a darkened block. The men are Fangio, Moss, Pedro Rodríguez, Innes Ireland, Ronnie Bucknum. They may as well be Beethoven, Einstein, Picasso. Golden-age titans and an ordinary person. Only she wasn't ordinary. She was also first-name friends with them, plus Briggs Cunningham, Carroll Shelby, Dan Gurney, Phil Hill, Steve McQueen, and the saxophonist Allen Eager. She lent Dave Brubeck a piano while he formed his quartet. She helped

Miles Davis with his first Ferrari, taught his son to ski, dated a preface McQueen in Fifties New York.

And she wrote about them all—God, how she wrote. Denise's writing is still the best to have ever graced this silly business—beautiful, honest, simultaneously carved from granite and filled with air. She worked for this magazine, for *Car and Driver*, and for *Autoweek*, which she helped found. Plus a hundred other places.

I discovered her at 13, in 1994, when she published her anthology, a 284-page paperback called *By Brooks Too Broad For Leaping*. It took me years to realize, but that book helped steer my life. Its phrasing shimmers, words wrapped up like



In a business that's all about idols and machines, she focused mostly on humanity, what pulls us together and drags us apart. And makes us great.

caramels. Richie Ginther was "built like a short stretch of barbed-wire fencing." McKay Fraser was "as changeable as an April day." The title, from an A. E. Housman poem, hinted at a theme. The author of "To an Athlete Dying Young" spent a life on love and death, but Denise maybe understood those things better. I dare you to read her on Masten Gregory or Harry Schell and stay in one piece. In a business that's all about idols and machines, she focused mostly on humanity, what pulls us together and drags us apart. And makes us great.

Rhythm and grace. Jean Jennings, co-founder of *Automobile*

Magazine, once told me that Denise was the only lady in an industry filled with women. I thought of that line the one time I met her, eight years ago, over lunch at the Detroit auto show. We sat in the back of the Audi stand and talked about old San Francisco, Peter Collins, her Land Rover with the license plate DOG. (Get it?) Sparkling wit, kindness, conversation like a plate of warm cookies. I silently wished she would adopt me. A co-worker ran into her months later at some media event at a racetrack, couldn't keep up, said she still drove like hell. She was 80.

Denise was not young when she put *Brooks* together, and she knew what she was doing. That book appears to be about dying, but it's really about getting out and being alive. And proof that every rule is fluid. It is peppered with sadness and joy, the loss of great people, and scenes from a world not made smaller for their leaving. When the rest of my heroes passed, she missed them for who they were, not what they represented. Which is also why I miss her.

When the news came, I called my friend John Krewson, a former editor at *R&T*. We traded silences. "She was the ideal," he finally said. "I would want my daughter to be like her. I would want my son to be like her. I wish I were more like her."

Others will write about Denise and tell stories. Many people knew her better—easy, really, since I didn't know her at all. I have no stories. I have only what she meant to me. Which, as far as this business goes, is everything. ■

Sam Smith is an editor at large for R&T. Brooks is out of print, but you can find more on Denise's amazing life at DeniseMcCluggage.com.



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Veyron Killed It

THE BUG THAT EXTERMINATED THE SUPERCAR.

THE ENGINEERD DEPT. BY JASON CAMMISA

THE BUGATTI VEYRON is the only Fastest Car Ever to be welcomed by enthusiasts with a loud, wet raspberry. It's too heavy, Internet trolls said. It's not pretty enough, armchair aesthetes complained. It's too expensive, everybody whined. Haters gonna hate, but as usual, they were hatin' on what they didn't understand. And certainly couldn't afford.

McLaren F1 designer Gordon Murray was a hater, too, at least until he drove a \$1.5 million Veyron for the January 2006 issue of *R&T*. Then he seemed to understand the philosophical significance of the car. "I have always felt a little responsible for starting this lunatic chase for top speed with the McLaren F1," he wrote, "and the Bugatti Veyron should put an end to this nonsense."

He was right. Bugatti closed the door on the numbers race. Today when we use the term "supercar," we're just talking about a fast car—there's nothing *super* about your Lambo when a 10-year-old, certified pre-owned Bugatti can leave it for dead. The Veyron so decisively altered our definition of fast that we had to invent a new category of million-dollar gauntlet cars: hypercars. They have hybrid gas-electric powertrains, big batteries, and pseudo eco-cred, but not one of them can come close to the Veyron's top speed. Flat out, Ferrari's \$1.3 million LaFerrari flagship is some 50 mph slower than a Veyron Super Sport.

To criticize the Veyron's looks is to forget that its top-speed target, 406 km/h (252 mph), was 1 km/h faster than the highest speed ever recorded on the Mulsanne straight at Le Mans. At the car's unlimited top speed, 267.8 mph, a Veyron Super Sport is traveling 100 mph faster than a Boeing 757 at takeoff. Pretty is secondary—the Veyron's body was there to keep the car on the ground. It's a miracle it looks as good as it does.

There was divine intervention in mass, too: 4500 pounds seemed obscene a decade ago, but not today—especially for a car as wide as a Lincoln Navigator. The Bug's 8.0-liter quad-turbo W-16 engine and seven-speed dual-clutch automatic alone weigh 1400 pounds—without the rest of the drivetrain, which is big enough to deal with 9000 lb-ft of torque heading to the half-shafts. Carrying all that mass and power—and coddling the occupants—is a carbon tub that initially weighed just 375 pounds. By the end of production, Bugatti had taken advantage of advancements in carbon-fiber technology and computer modeling and replaced it with a stronger tub that weighed 77 pounds less.

That was Bugatti's way: engineer to the limit, and then reen-gineer as time moved that limit. The original, 1001-hp Veyron took Bugatti's team of engineers five and a half years to develop. The 1184-hp models took another two and a half years and were effectively new cars. They had to be—the original was so opti-

mized that a measly 20 percent more power was too much. You can double the power of most cars without problems, but not the Veyron. It wasn't just the body that was as light as possible—every component was. The A/C compressor exploded on a 1184-hp test car's first acceleration run because the engine spun so quickly from idle to redline in first gear. Think about what the axles must have gone through.

Bugatti managed to sell all 450 units despite the seven-figure price tag, de facto proof that it wasn't too expensive. The only valid criticism of the Veyron came from those who climbed out of their late-night Internet flame-war Underoos and actually drove the car: It was a bit boring. That, too, was fixed when the Super Sport came out. It felt light and nimble, with intoxicatingly neutral handling and great steering.

Alas, it's all over. Two months after the last Veyron was sold, Ferdinand Piëch, the car's patron saint, was forced out of the



Flat out, Ferrari's \$1.3 million flagship is 50 mph slower than a Veyron Super Sport.

chairman seat at VW Group. The Veyron is the kind of car that can only happen when you put a megalomaniac engineer in charge of a car company with an unlimited budget and zero regard for profitability. With Piëch gone, there may never be another one. If, 10 years later, you still feel the need to criticize his baby, look around and see who's beat it. Nobody, haters, that's who. And it's doubtful anyone ever will. ■

Jason Cammisa is a senior editor at R&T. He, too, would break apart if given 20 percent more work.



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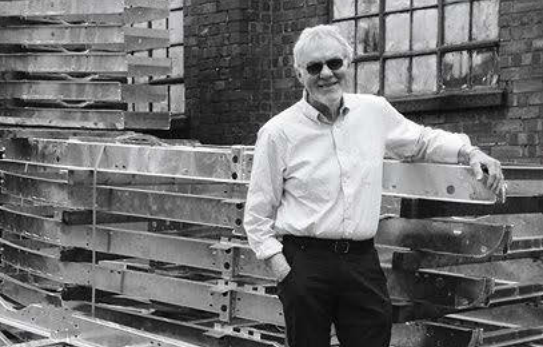
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SIDE GLANCES BY PETER EGAN

Morgan Mission

A CLASSIC CASE OF SEEK AND YE SHALL FIND. EVENTUALLY.

EVEN BEFORE MY WIFE BARB and I visited the Morgan factory in England last year, I knew it was probably a bad idea to go there.

I've always been drawn to Morgans but had never owned one and feared that as soon as I got into that charming, old red-brick Malvern factory, surrounded by the smell of wood and leather and glue, I'd emerge with an expensive case of Morgan fever. And so I did.

The factory gift shop didn't help much, either.

I loaded up on Morgan trinkets and posters, and when we flew home, I boarded the plane wearing a dark-blue commando-style sweater that had a discreet Morgan label sewn into its dense woolen fabric. It seems you need a warm sweater when driving a Morgan. And when you buy the sweater, you must have the car. Simple deductive reasoning. So I arrived back in Wisconsin duty-bound to find a good Morgan restoration project.

You may well ask, "Why a restoration project? Why not a new Morgan, or a good used one?"

Well, new Morgans are pretty much out of my price range, and fully restored cars from the Sixties have become quite costly as well. Also, unless they've been correctly restored—or kept in a very dry climate—older Morgans can be somewhat . . . organic, much like a sunken Spanish galleon or a mushroom farm in your basement. The steel ladder-frame chassis is susceptible to rust, and the ash skeleton of the body shell can suffer from dry rot and water damage. A glossy paint job on an old Morgan can hide a multitude of sins.

No morally suspect cars for this pilgrim. I wanted one I could build from the ground up, holding each redeemed and renovated part in my hands before it was bolted on. Besides, I'd recently finished a restoration on my 1974 Norton Commando and needed a project that would extend my tradition of severe financial loss and tedious evenings at the bead-blasting cabinet.

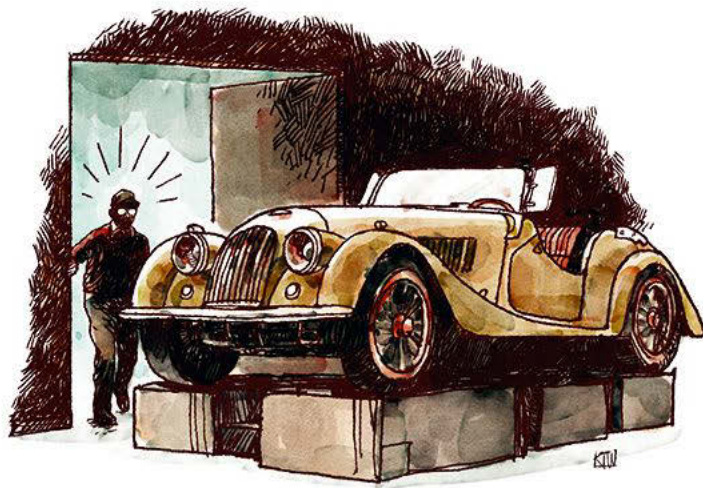
It was time to start searching. First call was to my serial Morgan-owning buddy John Jaeger in California. He told me he had a disassembled 1964 4/4 (the 1.5-liter Ford-powered version) he might consider selling, because he was preoccupied with a couple of hot rods. His friendly price was well under the many thousands he'd already spent on the car, but the nonrolling chassis, bodywork, and numerous boxes of parts would have to be trucked from California—an expensive proposition that raised the starting bid of the project considerably. I sold an old guitar and a few amps and began salting money away in an Official Morgan Fund.

Unfortunately, every time I got halfway to my savings goal, we needed a new furnace or our dishwasher died. Or the dog had to go to the vet and get its legs rotated. I called Washington and told them I needed a larger Social Security check, but they demurred. It seemed I would never get there.

Then last autumn, I drove to Colorado to do some motorcycling with my friend Mike Mosiman. Mike is a fellow British-car buff, so we stopped by his favorite repair/restoration shop in Fort Collins, a place called the Motorway.

And—lo and behold—there sat a pair of Morgan roadsters in the shop.

One was a 1939 4/4 of the old flat-radiator school, in nearly restored condition, and the other was a dusty, partially disassembled Plus 4 (meaning it had the big Triumph engine) in



No morally suspect cars for this pilgrim. I wanted one I could build from the ground up, holding each redeemed and renovated part in my hands before it was bolted on.

primer and bare metal, sitting in a corner with cardboard boxes stacked on it. "What's the story with that car?" I asked the shop owner, a personable young guy named Frank Strongoli III.

"That's for sale," he said. "It's an abandoned project car, a 1965 Plus 4. The owner spent a lot of money on it and then went broke in the financial meltdown of 2008. He'd already paid for the work, but he disappeared, so now we have to apply for a mechanic's lien. The only problem is, the missing owner still has the original title, and there's no VIN stamp in the new frame.

We'll have to get a DMV-assigned chassis number or sell it with a salvage title."

"What shape is the car in?" I asked.

"Well, it's got a new factory frame and a new wood-and-steel body shell. We rebuilt the engine, rear end, brakes, and front suspension. We were converting it to left-hand drive, so it has a new Gemmer steering box. It also has a brand-new set of Weber side-draft carbs, still in the box."

"How much are you asking for it?" I inquired.

"We just want to get our storage costs back and see it go to a good home," Frank said. He added that it still needed work and a lot of parts—gas tank, interior, paint, wood dash, wiring, fender repair, steering wheel, door latches, top, side curtains, etc.

"I'll buy it," I said reflexively. "But why don't you hold off on getting an assigned chassis number from the state. The correct VIN is pretty important to most Morgan owners, so let me write to the factory in England and see if we can cross-reference the engine and gearbox numbers to find the original chassis number. They have all this information handwritten in a big book."

When I got home from Colorado, I emailed Morgan's PR director—a gentleman named James Gilbert, whom I'd met while visiting the factory. He quickly wrote back and said he'd ask Morgan's archivist, Martyn Webb, if he could find the VIN.

This Mr. Webb kindly did. Turns out, the car was dispatched from the factory on August 27, 1965, to Bolton's of Leeds, Yorkshire. It was painted Smoke gray, trimmed in black leather, and came with wire wheels, sliding side curtains, disc brakes, and a heater. The original owner was a Mr. F. Franklin. Try getting that kind of detail out of a Kia factory 50 years from now.

I picture Morgan keeping this information in something that looks like the Book of Kells perched on a tall desk, everything written by goose quill while a candle flickers. Maybe it's all on computer now, but I

prefer the Dickensian version.

In any case, I sent the VIN to Frank, and his intrepid business manager/other half, Bobbi Pokora, managed to wrest a clear and correct title out of the State of Colorado. Two weeks ago, I borrowed a 14-foot enclosed trailer and towed it to Fort Collins with my faithful but road-weary 1998 Ford Econoline. I ran over a shovel handle in the road near Ault, Colorado, and knocked a hole in the rusty catalytic converter, so now the van sounds like a Can-Am car, but not as highly tuned.

Nevertheless, the angels smiled on this sketchy endeavor, providing that rarest of all things, five days of warm, clear, sunny weather on the Great Plains in March. No blizzards. My friend Jeff Craig, another former Morgan owner and restorer, went with me for company. And encouragement. Much has already been done on the Morgan, but the car needs a lot of elbow grease.

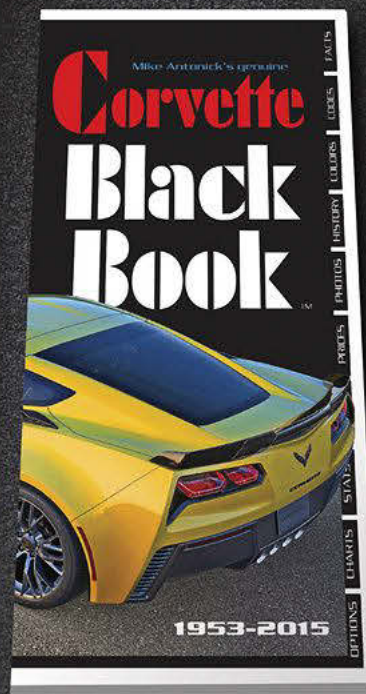
Which, of course, is why I drove to Colorado to get it. I wanted a project, and I've certainly got one. In spades. The Morgan is sitting in my workshop on jack stands. I've spent the first week of ownership sifting through boxes of parts and laying them on a temporary table made from a piece of plywood and two sawhorses. And bead-blasting random parts to be painted. Three full days of bead-blasting, so far.

I'm afraid it's going to take some time to put this thing back on the road, perhaps a year or more. But then, you don't buy a Morgan because you need good reliable transportation by next Tuesday. You buy it for the history, romance, and sheer off-beat Englishness of the thing. And because it fits in your workshop better than a de Havilland Gipsy Moth or a 32-foot Westsail sloop with teak trim.

And because you already have the sweater. ■

Peter Egan is an editor at large at R&T. He left the Yugo gift shop empty-handed.

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THE FIRST DRIVE | 2016 FERRARI 488 GTB

BACK TO SPOOL

**FOR TWO DECADES, MID-ENGINE FERRARIS REVVED HIGH
AND ESCHEWED TURBOS—UNTIL THE NEW 488 GTB.
WHAT LESSONS HAS FERRARI LEARNED SINCE
ITS FIRST TURBOCHARGED SUPERCAR, THE 288 GTO?**

BY CHRIS CHILTON | PHOTOGRAPHY BY RICHARD PARDON



The 288 GTO's blistered fenders and quad headlamps are pure lust (above left). The new 488 GTB (right) on the Italian mountain roads where engineers honed the suspension.

THOUGH IT MAY RESULT IN FEWER PARKING lot fistfights, the turbocharged versus naturally aspirated argument is as tribal as Mustang versus Camaro. There's a line in the sand, and the "no replacement" faction doesn't take kindly to defectors. The rev counter in the new 488 GTB is those purists' greatest fear: a 10,000-rpm readout with a red dash at eight grand, a full 1000 rpm earlier than the outgoing, all-motor 458 Italia. Ferrari, a company that hangs its Borsalino on engine craft, ditching heady atmospheric V-8s in favor of smaller, forced-induction lumps? Maybe there'll be some action in the parking lot after all.

Here's the thing, though: Some of the greatest Ferraris featured forced induction. Cars like the F40 and the car to which it owes its existence, the 1984–1987 288 GTO. The Gran Turismo Omologato nameplate is just as steeped in Ferrari lore as wailing, naturally aspirated eights and twelves. And so, in evaluat-

ing the 488 GTB, we decided to bring along a 1985 288 GTO for context: Has Ferrari lost the thread or simply come full circle?

While the GTO wasn't Maranello's first boosted mid-engine road car, it's the first one you should care about. Back in 1982, in the midst of F1's dalliance with turbocharging, Ferrari bolted a turbo to its home-market 208 GTB, upgrading an emasculated 2.0-liter V-8 from a pathetic 153 hp to a respectable 217 hp. It's worth acknowledging the correlation between the 208 GTB Turbo and today's 488. But for the purpose of this exercise, we trotted out the one with 394 hp and a nasty streak. Sorry for skipping to the good stuff.

And, oh, is this stuff good. Most vintage supercars, old Lamborghini's and such, are fascinating, absorbing machines to drive. But by modern standards, they're junk. There are no disappointments with the GTO; you make no excuses for its age. You drive it, abuse it like a new car. And then you get out wondering how it must have felt in 1985 to experience something so brutally rapid as its 189-mph top speed.



Instead of the contemporary 308's steel body, the GTO wore a coat of fiberglass (like the very first 308s) over a steel space frame, with a Kevlar front hood and a rear firewall fashioned from Kevlar, Nomex, and aluminum honeycomb. The swollen fenders augmented the 308's prettiness with much-needed muscle, and four under-bumper driving lamps gave it its own visage. The bizarre mirrors could double as nine irons, and three cooling slots behind each rear wheel provided a neat visual connection to the Sixties 250 GTO Group 3 racing car, the first to wear the GTO badge.

Hanging way down below the bumper line, the exposed transmission was the biggest

The 288's transition to boost is resolutely savage. Technology available at the time meant delivering big power from a relatively small V-8 couldn't feel any other way.

clue to this car's uniqueness. The 308 GTB's engine was mounted transversely, but the GTO's ran north-south. Better for plumbing the turbos and more practical for swapping gear ratios in the heat of competition.

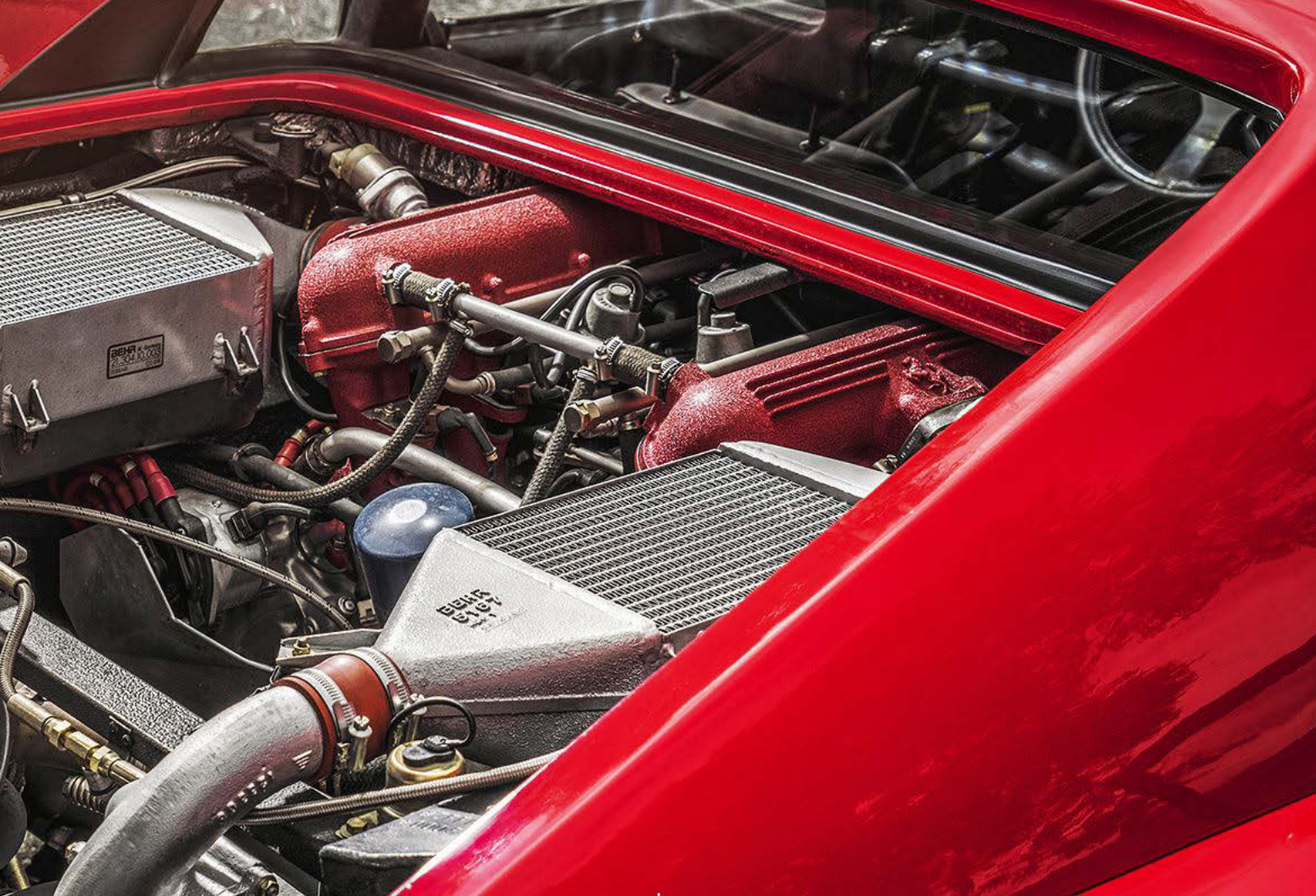
The F40 that followed, sensational as it was and still is to drive, was a bit of a sham. All dressed up with nowhere to race. The comparatively demure-looking 288 was the real deal, a road car that existed only to homologate its tarmac-racing (no, not rallying) counterpart. The GTO's engine displacement even shrank from 2927 cc to 2855 cc to fit under the Fédération Internationale du Sport Automobile's regulations. And while the planned road-racing bit of the Group B series was canned before the car turned a wheel in anger, Ferrari did manage to make 272 road-car customers very happy indeed—and it inadvertently created a new subgenre of supercars in the process.

Though its exterior is 2.9 inches longer than the 308's and a massive 8.2 inches wider, the GTO's interior seems absurdly small. Bathed in light from the huge expanses of glass, it's almost lavish next to the F40's string door pulls and kit-car felt dash, but still feels spartan and cheaply finished. And then there's the ergonomics: steering wheel pointing skyward like a satellite dish, the pedals so far offset, there's no finding a natural driving position.



The 2.9-liter V-8 is menacingly gruff at idle, the clutch and dogleg manual shift, stiff. Grab at the wheel to pull away, and the total lack of assistance is a shock to your servo-weaned arms. Did I really just say you could drive this like a modern supercar?

Crank up the pace, though, and the years fall away. Forget the 5.0-second 0-60-mph time Phil Hill recorded in *R&T*'s August 1984 test, which seems slow today. From the driving seat, on boost, it's incredibly fast, even when judged against modern machinery. But that acceleration kick is bookended by turbo lag at lower revs and a slow but satisfying shift at the top end. The transition to boost is less brutal, more manageable than in an F40, but still resolutely savage. Technology available



at the time meant delivering big power from a relatively small V-8 couldn't feel any other way.

Now it can. Crack open the throttle of the new 488 GTB and it lunges forward with stomach-churning ferocity and almost no hesitation between right-footing and hotfooting. If driving the GTO is like being towed behind a Bugatti Veyron with a stretch of bungee cord, in the 488, you're upgraded to a goose-neck hitch. It wouldn't be true to say there's zero lag—that'll come within the next five years when Ferrari starts electrically spooling its turbochargers. But the delay between asking for power and full boost is so small that on a graph Ferrari showed, the 488 is making the next gearchange while a McLaren 650S

is still waiting for the torque tsunami.

The 488 GTB's 3.9-liter engine shares its aluminum block, but little else, with the California T. The heads, pistons, crank, and rods are new, and the turbo technology goes much further in eliminating off-boost torpor. The California T minimizes lag with twin-scroll turbos and expensive, three-piece, equal-length exhaust manifolds. But the 488's turbines—made, like those on the GTO, by IHI—feature ball bearings and titanium-aluminum compressor wheels for reduced friction. An abradable seal between the wheel and the housing maximizes efficiency.

A pair of massive intercoolers cap the 1985 288 GTO's V-8 (top). The rear racing-style gearbox (above).



*Drive a 488 as hard as you dare, then tell me it's not exciting enough.
I'll look you straight in your dead eyes and call you a liar.*

The result is 660 hp at 8000 rpm, up from the California T's 552 hp and the 562 hp produced by the outgoing 458 Italia. Impressive, but look at the torque: The Italia phoned it in below 6000 rpm, where its 398-lb-ft peak was achieved. The 488 makes 41 percent more twist at half the crank speed. And it transforms the way this 488 drives.

Where once you needed second gear for switchbacks, now third or even fourth will do. Instead of dropping two cogs to wake the motor for that impromptu overtake, you can do it with one. Or none. And all that despite the engine's full 561 lb-ft of torque being available only in seventh gear. As on the California T, Ferrari has tailored boost curves for each gear. So in seventh, you get a torque curve as tall and wide as possible for freeway passing. In the lower ratios, boost is artificially restricted at low revs to avoid the dull blare so many blown engines emit and to mimic the character of a naturally aspirated engine, encouraging you to chase the redline.

Drive a 488 as hard as you dare, then tell me it's not exciting

enough. I'll look you straight in your dead eyes and call you a liar. This thing is every bit as intoxicating as the 288, and the increased responsiveness only makes it more engaging. Waiting an eternity to spool up and then being hurled forward like you've been rear-ended by a semi is base-level fun, but it also removes the connection between man and machine. And when you're slithering sideways through an epically fast left-hander at Fiorano, deep into fifth gear and wondering whether to feed in another inch of throttle, that relationship is kind of handy.

Still, something nags. It isn't that this engine sounds less sexy than the 458's (true). Or that design director Flavio Manzoni's revised bodywork trades delicacy for drama as it cleverly integrates the blow-through rear spoiler, active diffuser, and double-height front splitter that help improve downforce by 50 percent.

No, it's more a philosophical musing. Every time engineers opened their mouths during the technical briefing, it was to explain how they've minimized unwanted side effects of turbocharging, to explain the lengths they went to make this feel



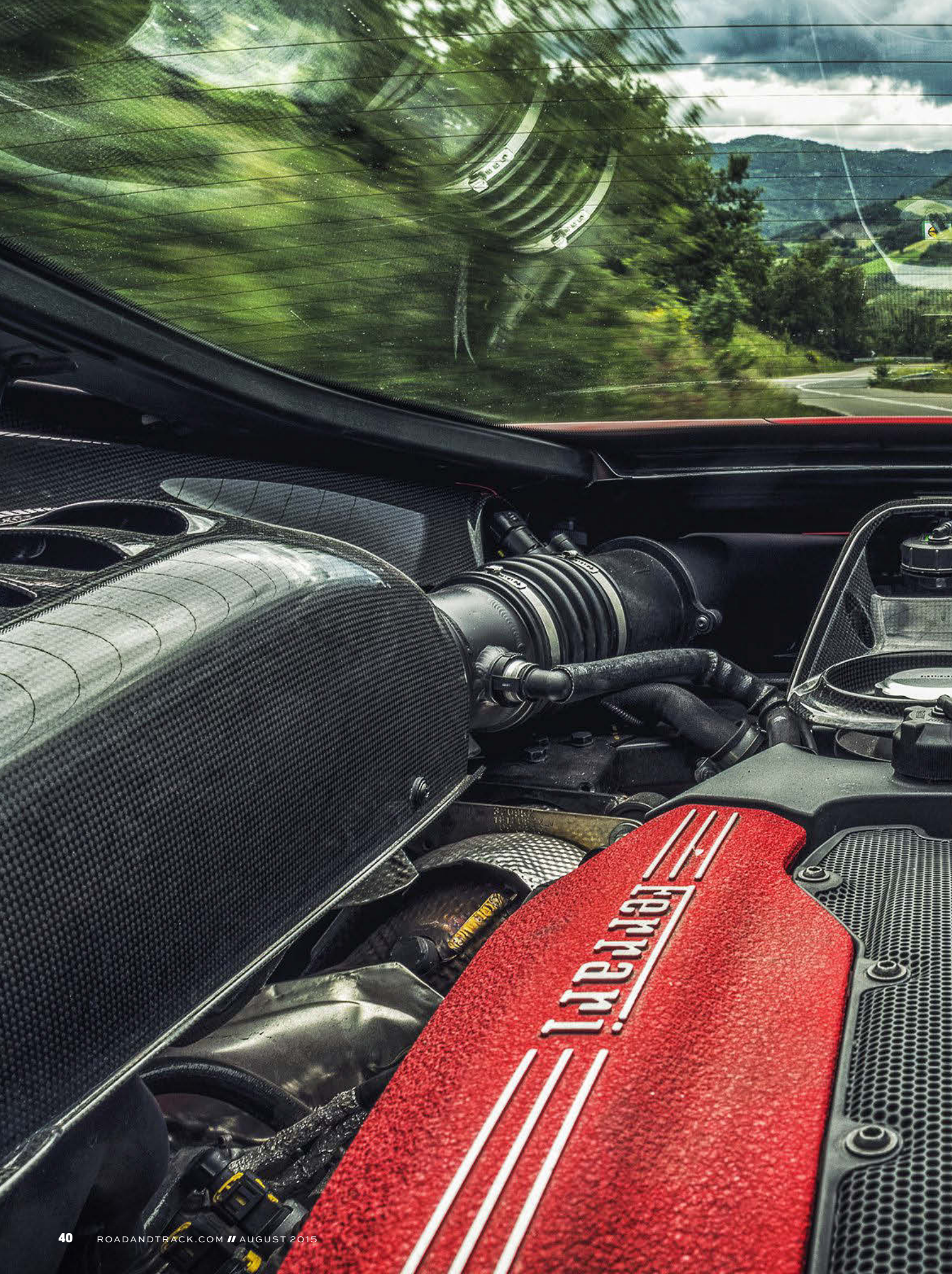
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TLX IT'S THAT KIND OF THRILL







No mid-engine car with this much power has any right making it so easy to drive far beyond the tires' natural limits.

like a naturally aspirated engine. The 3.9-liter is incredible, but is it what Ferrari would've built if CO2 targets hadn't forced its hand? Did any of them really want artificial aspiration over natural? No one is saying, but I'm convinced the answer is no.

Later, Matteo Lanzavecchia, head of vehicle testing and development, told me to look at it another way. "If we'd stayed with a naturally aspirated engine, we might have pushed to 610 hp, but there's no way we could have delivered 660 hp, and certainly not this much torque. Even without the pressure to meet emissions targets, we would have had to switch to turbocharging to meet our performance goals."

Those goals include beating the track-focused 458 Speciale's 1:23.5 Fiorano lap time, which the 488 GTB does by a half second, making it two seconds quicker than the base 458 Italia. Acceleration to 62 mph requires the same 3.0 seconds as the Speciale, but when the GTB hits 124 mph at the 8.3-second mark, the Speciale is almost a second adrift. The Italia can't get out of the 10s.

At a claimed 3252 pounds, the 488 is 22 pounds lighter than the Italia but 177 pounds heavier than the Speciale. The tires, downgraded from the track car's supersticky Michelin Pilot Sport Cups to regular Pilot Sports, sacrifice some outright grip for better wet- and cold-weather performance. There's a little more understeer than in the Speciale, but a little less than in the regular 458. More steering precision and a touch more weight, too. The carbon-ceramic brakes, lifted from the LaFerrari, feel fantastically strong and progressive underfoot. The seven-speed dual-clutch transmission upshifts 30 percent faster, downshifts 40 percent faster, and now accepts commands for multiple downshifts. I miss three pedals as much as the next guy, but this is an astonishingly good transmission.

Dynamically, though, the biggest change between the 458 series and this 488 is the magnetorheological dampers. They're now looped into the second-generation stability-control system. No mid-engine car with this much power has any right making it so easy to drive far beyond the tires' natural limits.

What owners say about V1...



★★★★★ Bill P., Phoenix, AZ

Where's the radar? An arrow lights up, pointing either Ahead, to the side, or Behind. And, amazingly, it's never wrong.



★★★★★ Arnie R., Atlanta, GA

So easy to operate, a box with one knob. No need to poke around at full-arm's reach for little buttons the size of rice grains.



★★★★★ Glenna R., Dallas, TX

Love the arrows! Where's the radar? They tell me every time. How come no other detector thought of that?



★★★★★ Chas S., Charlotte, NC

Situation Awareness you can trust. With the Radar Locator arrowing toward threats, and the Bogey Counter telling how many threats you face, V1 makes defense easy.



★★★★★ Cal L., Trenton, NJ

I've owned my V1 since 2001, and I've had it upgraded twice. I trust the arrows to point out every radar trap. When I know *where*, I know how to defend.



★★★★★ Ed H., Las Vegas, NV

How can anyone not be smitten by the Arrows? Radar ahead needs a different defense than radar behind. When I know where, I know what to do. And I can tell when I'm past the threat, too. All other detectors just *beep* and keep you guessing.



★★★★★ Rob R., Sacramento, CA

This is the slam dunk best radar detector. No databases to keep updating, or other "features" I'll never use. Instead V1 tells me the important stuff—the Bogey Counter tells you how many threats within range and the red arrows tell where they are.

Trust...V1 earns it one ambush at a time.



★★★★★ Harold B., Houston, TX

On my way home this afternoon I was following another detector user. I could see red blinking in his windshield as we went past the first radar. Thinking the danger was behind, Mr. Ordinary Detector User hit the gas.

Uh-Oh. V1's **Radar Locator** was showing two arrows, one pointing toward the trap now behind, and a second arrow ahead. The "2" on the **Bogey Counter** confirmed we were being double teamed.

Sure enough, Mr. O. D. User cruised into the second trap up the hill at 15 over and got himself a blue-light special.

V1 points to every trap. I trust it completely.

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Tracks one or more radars at the same time; points to each.



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2016 Ferrari 488 GTB

PRICE \$245,000**ENGINE** DOHC 32-VALVE TWIN-TURBOCHARGED
3.9-LITER V-8**PEAK OUTPUT** 660 HP @ 8000 RPM
561 LB-FT @ 3000 RPM**TRANSMISSION**

7-SPEED DUAL-CLUTCH AUTOMATIC, RWD

L x W x H 179.8 x 76.9 x 47.8 IN**WEIGHT** 3252 LB**0-62 MPH** 3.0 SEC**TOP SPEED** 205 MPH**ON SALE** LATE FALL

1985 Ferrari 288 GTO

PRICE \$85,000 (WHEN NEW)**ENGINE** DOHC 32-VALVE TWIN-TURBOCHARGED
2.9-LITER V-8**PEAK OUTPUT** 394 HP @ 7000 RPM
366 LB-FT @ 3800 RPM**TRANSMISSION**

5-SPEED MANUAL, RWD

L x W x H 168.9 x 75.2 x 44.1 IN**WEIGHT** 2555 LB**0-60 MPH** 5.0 SEC**TOP SPEED** 189 MPH

The compliance of the GTB—arguably the single greatest trait of any modern Ferrari—is staggering. Whatever the road, however bad the surface, you know you can keep the hammer down and make every single horse count. That never comes at the expense of body control—the 488 GTB's stiffer springs and revised shocks clamp down on rock and roll harder than John Lithgow in *Footloose*.

Predictably, the GTO can't get near the 488's body control or its precision. But if there's one thing that really dates the 288, it's the steering, because it's finger-tingling spectacular. Short on kickback but big on the richly textural feedback that reminds you how sanitized most modern assisted systems are. It's one of the reasons why, despite having driven most of the landmark supercars from the Miura to the McLaren P1, I can't think of many past masters I've wanted in my garage more than this GTO.

Sadly, unless you're a shipping magnate, that 288 ownership boat has sailed. For several years, GTOs were vaguely attainable, in that 30-year fixed-mortgage kind of way. Now, they're north of \$2 million, making the new \$245,000 488 GTB something of a bargain.

I have to admit, I missed extracting those last 1000 revs on track, and the noise that accompanied it. And I suspect Speciale values will go stratospheric in coming years as it takes its place as the last of a pure breed. On balance, though, the 488 is so much better than the car it replaces. Faster and more flattering and talented over a much broader spectrum, it's more fun more of the time. When the 288 and F40 died, so did the turbocharged Ferrari, left to look like a curio, a technical dead end. But, even at 8000 rpm, the 488 GTB proves it is anything but. ■

The 488's cabin embraces technology and sets the proper mood with carbon fiber and leather.







THE FIRST DRIVE | 2016 LAMBORGHINI AVENTADOR LP 750-4 SUPERVELOCE



ZACH BOWMAN HAS NEVER
DRIVEN A SUPERCAR.

LAMBORGHINI HAS NEVER
BUILT ANYTHING THIS POWERFUL.

CIRCUIT DE BARCELONA-CATALUNYA HAS NEVER
BEEN KIND TO ROOKIES.

TRIAL BY FIRE

PHOTOGRAPHY BY TOM SALT



CLAIMING I'VE DRIVEN THE LAMBORGHINI Aventador LP 750-4 Superveloce feels disingenuous, just shy of an outright lie, like a half-truth or a baseless brag. I got tangled up with this car for 16 laps, four sessions of four, split over a warm morning in the hills outside Barcelona. Drive? No. I held on, but that's a lot more than most of the world can say.

This car isn't for you or me. Lamborghini is only building 600 examples of the SV, and most of them are already sold to people with Scrooge McDuck wealth. It is the physical manifes-

tation of "Let them eat cake," a deeply conflicted creation that courts exclusivity for exclusivity's sake and the vicious edge of performance with no eye toward competition. It's Michelangelo painting his kitchen ceiling for dinner guests instead of the arching plaster of the Sistine Chapel for all the world to see.

It's also the only Lamborghini I've ever driven. Why come at it slow? I'll take the one with extra crazy on top. The standard Aventador is already insanity made real, and the SV treatment kindly pushes the car even further from reality's frigid grasp. Engineers pried 110 pounds from the car, mostly by throwing more carbon fiber at an already carbon-intense creation. New



rockers, air intakes, and, yes, that phenomenal rear wing are all hewn from the stuff. The black strands look like pieces of exposed carapace against the livid paint.

Jutting air intakes in the fascia and a massive rear diffuser work with the other bits to increase downforce by 170 percent compared with the more common Aventador, and the balance can be pitched front or rear by manipulating the adjustable spoiler. There is no button with which to articulate that expanse of matte carbon fiber, no hidden servos to do the deed. You must put wrench to fastener and turn it yourself. Or have one of your serfs do it. Either way, it requires human input. This \$500,000

car shoves a crude tool in your palm and says, “Deal with it.” I can get behind that.

Tweaks to the underbody tray help make the car 150 percent more aerodynamically efficient. Despite the additional downforce, the SV is slicker through the air, which lets it push past 217 mph. They tell us this before releasing us onto our playground for the day: Barcelona’s blissful Catalunya circuit. The

Just before the V-12 behind my spine wakes up and gets busy tearing at the world, I hear the hiss of atmosphere being siphoned from the Spanish sky and crammed into those cylinders.

course is almost three miles long, with 16 turns sprinkled over the distance. It’s the one with the long, slightly downhill straight that promises to let you stretch the legs of whatever horse you’re riding, even if that horse has leather wings, a lizard tail, and breathes blue fire in your face.

Two hundred and seventeen miles per hour. The number rattles around in my head as I look at the cars in a row, a spectrum of caustic colors that wouldn’t be amiss on the darker corners of the Vegas Strip. I have not been to 217 mph. I know one person who has. He doesn’t speak of it fondly. 170? Sure. But speed’s funny that way. A buck-seventy’s further from 150 than 100 is from 80. The higher up the speedometer you go, the harder everything gets, and if you want those big numbers, you’re going to need power.

This is not news to the Superveloce. The 6.5-liter naturally aspirated V-12 behind the cabin screams to 8500 rpm, dumping out 740 hp and 509 lb-ft of torque along the way. More numbers from another dimension, one that seems

pretty far from the driver’s seat. Off idle, churning down pit lane in first gear, the car doesn’t bark or burble. It groans under the insult of anything less than a full thrash.

Just before the engine behind my spine wakes up and gets busy tearing at the world, I hear the hiss of atmosphere being siphoned from the Spanish sky and crammed into those cylinders. There are many distractions. Gear noise and heat, the building decibels of the exhaust, and the urgent hammering of my heart all demand immediate attention, but that serpent sound is there. It’s a prelude to the violence and lust and vulgarity of the most powerful production Lamborghini ever built.





In SV guise, the Aventador has
50 hp more and can touch 217 mph.





Oblige it on the open track and the tune changes from a groan to a wail both brutal and threatening. One Superveloce at wide-open throttle sounds like a fleet of oppressive war machines from a darker future.

But I don't remember the engine. Not really. What I remember is that transmission, shifts as violent and shocking as a curse in church. The Superveloce translates power to

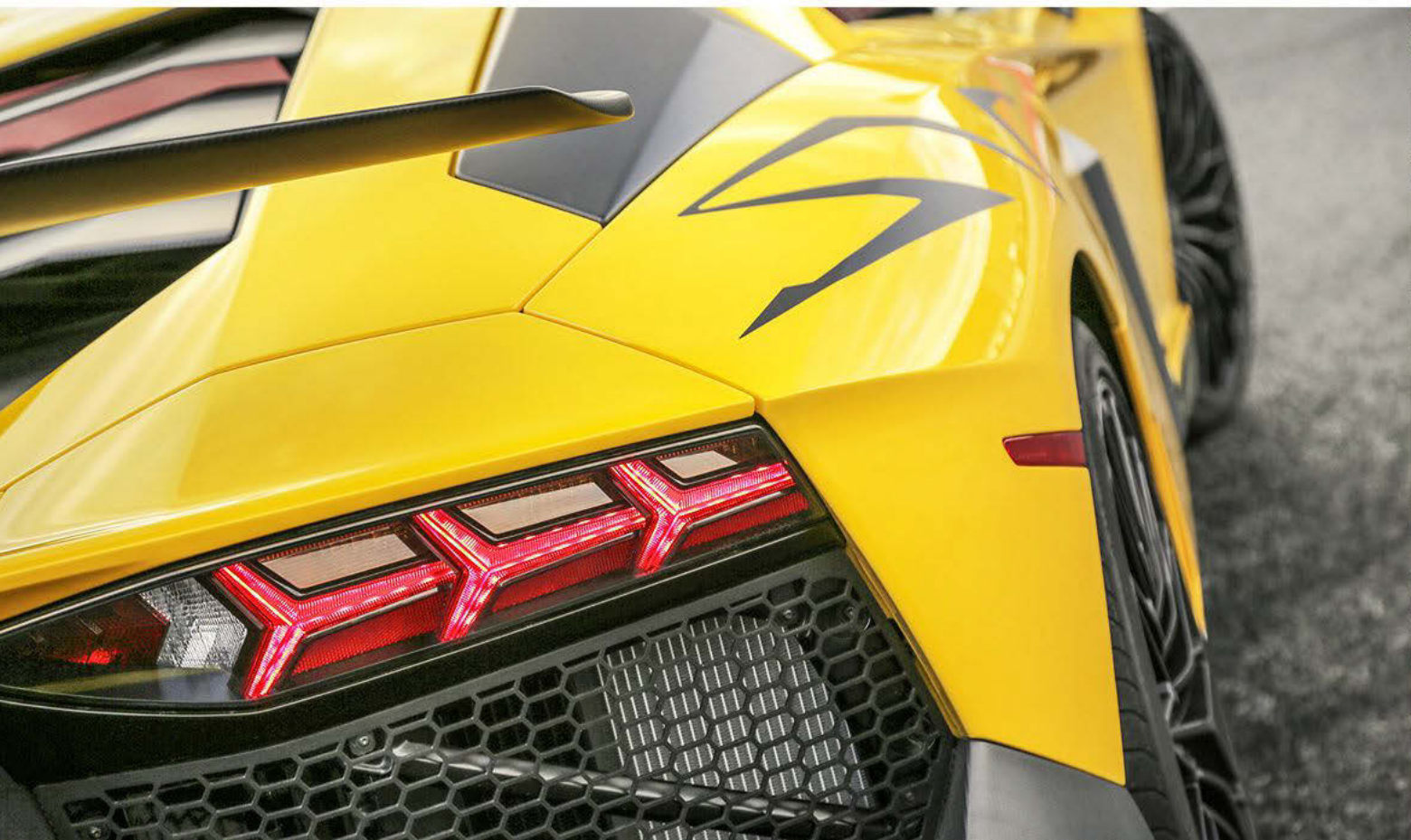
The Superveloce is alive and writhing, twitching its hips at an improper shift or throttle lift, gracefully rotating out of apexes and hunkering on its claws under braking.

the ground through a seven-speed automated manual with all the civility of a butcher's cleaver. Click the column-mounted paddle and the thing will slap your bones with a 50-millisecond shift. F1 cars do it in 40.

I remember the grip, too. Lamborghini piled on hardware to make the SV stick, including a new dynamic steering system and magnetorheological shocks, a first for the Aventador's pushrod setup. The former adjusts the SV's steering ratio on the fly, while the latter allows for wide swings in damping force. The system can independently vary each damper midcorner to increase grip and reduce body roll or negate brake dive. That kind of nonsense typically grates, but the wizardry behind the steering and suspension works so well, so imperceptibly, it's brilliant. They're not parlor tricks, they're weapons.

The Aventador Superveloce has three drive modes: Strada, Sport, and Corsa. The last one is what you want. It's two fistfuls of boar hair and the beast beneath, turning the car feral and righteous. Even through the technical chicanes on the back quarter of the track, the steering is sharp, with a wickedly quick ratio. If you're into the tiller more than 90 degrees, something has gone wrong.

The SV is stuck and loose at the same time, the all-wheel-drive system and Pirelli-clad center-lock rollers in constant battle with a tide of power and torque. The throttle might as well be a go-sideways lever. Turn 3 is a massive, slightly off-camber right-hander, and on fresh rubber, the Superveloce welds itself to the tarmac. Two days later, my upper



arm was sore from trying to hold myself in place. Sore. From driving a street car.

Not that I was flopping around the cabin. The plush seats of the Aventador have been abandoned in favor of fixed-back, carbon-shell buckets molded to the svelte posterior of some Italian god. No carpet on the floor, no supple leather on the doors, just carbon fiber everywhere. Even the stereo went into the scrap pile, sacrificed at the altar of weight reduction. The SV feels industrial and harsh with a rare purity of purpose. The cockpit is also the source of its conflicted nature.

This car can lap the Nürburgring in less than seven minutes.

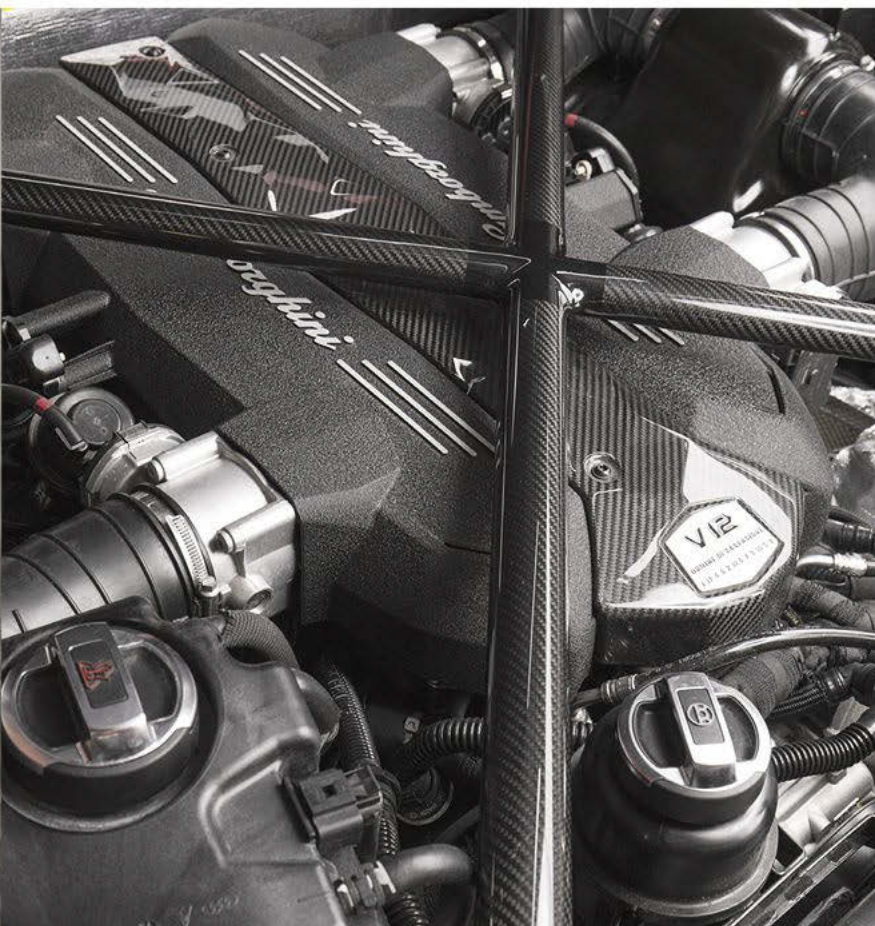
Trophy photo after conquering the beast (top). Aero is adjusted by hand (above); V-12, no turbo needed (at right).

It can tear off 0–62-mph sprints in a claimed 2.8 seconds and rip to 186 mph in only 24 seconds. But the fantastic seats, the same type you'd find in a Le Mans prototype, aren't designed for a five-point harness. There are lots of reasons, some legal, some practical, but it boils down to the fact that engineers found it difficult to safely and effectively anchor the straps in the carbon-fiber monocoque. Then there's that roofline, so low you'd have to work to fit an average-height driver wearing a helmet. And all in a car that has no business having its neck wrung anywhere but a closed course. How Italian.



2016 Lamborghini Aventador LP 750-4 Superveloce

PRICE \$495,000 (EST)
ENGINE DOHC 48-VALVE 6.5-LITER V-12
PEAK OUTPUT 740 HP @ 8400 RPM
509 LB-FT @ 5500 RPM
TRANSMISSION 7-SPEED
 AUTOMATED MANUAL, AWD
WEIGHT 3800 LB (EST)
0-60 MPH 2.7 SEC (EST)
TOP SPEED 217 MPH
ON SALE NOW



What is the SV, then? An expensive ego stroke? Lamborghini's answer to the tired question why climb the mountain? I'm not sure. I've always respected the guys in Sant'Agata Bolognese, not because they build fierce cars with weird doors, but because I got the feeling they were in on the joke, never taking themselves too seriously, poking Ferrari over the absurdity of the holier-than-thou supercar. For every vacuum-sealed 458 Italia, there's a Huracán that says, "Chill out. Anyone can do what you do, even a tractor company." Ferrari red? No. F***-off orange.

But this? This feels like Lamborghini is no longer laughing with the rest of us. There's an undercurrent of genuine desire to

no longer be a jester mocking the noblemen at court.

The hard morning of bashing around the circuit takes its toll on those Pirellis, and by noon, it's clear exactly how much of the car's grip rests on their shoulders. The SV is splattered with bits of rubber, black comet streaks on yellow paint, like it's driving through a hailstorm of spent tire. The crisp turn-in fades, replaced by the all-too-familiar specter of understeer. The car loosens up even more, bowing under the hellish force of the engine and hustling 3800 pounds of carbon and aluminum around an F1 course.

The SV is alive and writhing, twitching its hips in warning at an improper gearchange or throttle lift, stepping wide out of apexes in graceful rotation and hunkering on its claws at each waking of the brakes. They're carbon-ceramic platters, and clamping on them with any ferocity will send every cell in your bloodstream shooting toward the front of your body. There's an accompanying flash of dizziness, and you hope like hell you can remember to tighten your gut before the next right-hander.

Each lap feels like something survived. The Superveloce will neither coddle you nor hold your hand, and it's exactly what you pray a Lamborghini will be, what you see in your mind and feel in your stomach when someone whispers that name. Not the buttoned-down, cool precision of the company's German overlords, but a thing full of character and scorn.

Brass knuckles, not collar stays or cuff links.

Am I different for driving it, for having wrenched a Lamborghini from the misty realm of the conceptual and transmuting it into cold reality? Yes and no. I have a new definition of speed, having been reoriented by the most powerful vehicle I've ever driven, and a new respect for what a company can accomplish with single-minded focus. But the Aventador Superveloce isn't my new pedestal car. It's not something I can rationally aspire to any more than a vacation on the red shores of Mars. It's a fantasy, a trick of the light that I saw and touched and felt one Sunday morning in Barcelona. ■

THE FIRST DRIVE | 2016 PORSCHE 911 GT3 RS

PURPLE REIGN

**MORE DISPLACEMENT, BIGGER HIPS, BUT STILL NO THIRD PEDAL.
IS THE RS A BETTER GT3?**

BY CHRIS HARRIS | PHOTOGRAPHY BY G.F. WILLIAMS





PORSCHE'S WEISSACH TEST TRACK is an especially pernicious snake's nest of asphalt in the hills above Stuttgart. It is the proving ground for the unfathomable quantities of new products and technologies developed within Porsche's R&D headquarters. The place is huge and, judging by the canopy of cranes, still growing. I once asked R&D boss man Wolfgang Hatz what made Weissach so special. He paused and said: "It is one of the few places on earth where you can build an entire car without leaving the facility. The whole car, from the first components to testing it on circuit."

Weissach is as much a part of company legend as Fiorano is for Ferrari, but for quite different reasons. This is a proving ground, not a racetrack. It is in constant use, and because there is no runoff, Porsche doesn't often introduce new models to the media here. Today it's made an exception. I have two hours to drive the new 911 GT3 RS around Weissach. Each of the corners is allegedly named after the Porsche executive who crashed there. Helpful intel, that.

In some ways, the RS exists as Porsche's redemption for last year's GT3 issues. The recalls to replace engines

not only cost the company millions, they potentially damaged the reputation of Porsche's GT department, which was enjoying its most successful period in the company's history.

Accordingly, it's no surprise that the RS uses a heavily amended engine. The 3.8-liter flat-six has been stroked to 4.0 liters and has a new intake system. Its crank is cast using metallurgy techniques honed with the 919 Le Mans race car. Peak figures are eye-popping for a naturally aspirated 911: 493 hp at 8250 rpm and 388 lb-ft at 6250 rpm. The development team is mighty pleased with the Turbo-body side intakes: They allowed a much more accurate and concentrated airflow for the revised intake system and, perhaps most important, led everyone to suggest from spy shots that this car would be turbocharged. The Porsche types do enjoy a snigger at our ignorance.

While the 3.8 revs to nine grand, the 4.0 runs out of puff at 8800 rpm. Its extra four millimeters of stroke increases both airflow through the engine and internal friction. The bigger-displacement engine can't handle nine grand. As with the last RS, the rear exhaust box is titanium. Unlike the last RS, there is no manual transmission, but that does at least give me something to moan about later in the story.

The wider Turbo body and increased track widths

At Porsche's Weissach track, the 991 GT3 RS delivers front grip like no other 911.



would look more extreme if the wheels and tires were not so damn huge. The 20-inch front tires run a 265-section, while the rears are vast 325-sections on 21-inch rims. If, like me, you're wondering how the front tires manage not to foul the wheel arches on full lock, you'll be glad to know they do rub just a bit. But Andreas Preuninger, chief of the GT department, and his team wanted the best front-axle grip possible and figured that owners would sacrifice some noise for lap times.

That attitude pervades the whole machine. I think we've become quite well conditioned to the Porsche fast-car strategy: The GT3 comes along, and then a year later, the RS adds some more poke and attitude, takes away some weight, and assumes a loud color. But this 991-chassis RS seems a whole lot angrier than the GT3.

Take the aerodynamics. I mean, you can digest the claimed numbers—a few hundred more pounds of this and that at some speed—but you'll never be able to verify them. Instead, look at the chin. Look at the size and angle of the rear wing. Look at the front-fender exits. In my experience, these things make a car much stickier at high cornering speeds, but sadly, Weissach doesn't have many fast turns. Then again, in the rush to get here from the Swabian hills, I ran the RS fast on the autobahn,

where it romped straight to 180 mph and then hit an invisible wall. That's another thing big wings tend to do.

I cannot tell you how glad I am that Porsche decided to fit the smaller, slightly dished steering wheel from the 918 Spyder. With an interior that is mostly normal 991, you need something to lift the GT3 RS beyond the ordinary, especially when the trophy of corporate capitulation, the PDK lever, lurks between the seats. There's a smattering of RS logos, and the 918 also donates its carbon bucket seats; 18-way adaptive sport seats are a no-cost option.

Compared with the GT3, there's a little more low-frequency *ba-boom* from the RS when it starts. Everything else is familiar bar the smaller wheel. I like the smaller wheel. And I like the track—the place reeks, nay, stinks of heritage. This is where Donohue had a few glasses of wine over lunch, then drove a 917 so fast, Porsche's test driver went home. This is where every great 911 road car has been developed. This is one of the worst places in the world to crash.

It's a warm day and it takes half a lap to nod approvingly at the front-axle grip. When, or perhaps if, the world calms down over the previous-generation, now legendary 997-chassis cars, it will realize that the 991 has many inherent advantages





over the 997, most of them due to the longer wheelbase. But anyone who tracks or races a 911 always ends up looking for front grip. The RS delivers it like I didn't think possible.

The wider track and broad Michelin Pilot Sport Cup 2s mean the car just scoots from turn entry to apex. It feels entirely intuitive and measured, but of course this car is fitted with rear steering, so the development process must have been somewhat complicated. You can carry so much speed into corners that you don't feel like you're using much of the traction capabilities on corner exit. The shocking discovery is that your inclinations are correct. With the systems on, you push harder and the traction is silly—and the subtle intervention of the electronics when you eventually think, *Screw it, I'm going to mash the throttle and see what happens*, is equally mesmerizing.

The calibration work is outstanding. This feels like a completely raw, organic driving experience, yet it is actually profoundly complicated and disconnected:

Harris lauds power delivery, steering feel, and seats, bemoans lack of manual gearbox.

2016 Porsche 911 GT3 RS

PRICE \$176,895
ENGINE DOHC 24-VALVE
 4.0-LITER H-6
PEAK OUTPUT
 493 HP @ 8250 RPM
 338 LB-FT @ 6250 RPM
TRANSMISSION
 7-SPEED DUAL-CLUTCH
 AUTOMATIC, RWD
WEIGHT 3150 LB
0-60 MPH 3.1 SEC
TOP SPEED 193 MPH
ON SALE NOW

Even the electric power steering feels good to me. But then, in consistent conditions, electric steering has always been okay; it's when you need information on wet roads that it falls apart. I'll need some precipitation for a definitive view.

It is hard to investigate the chassis and brakes, because all your head can really acknowledge is that 493-hp event going off behind you. The twin side intakes give little suggestion of making different noise than the 3.8 at idle, but under full load, the thing is scintillating. It accrues revs so fast and loves to be working beyond 7000 rpm, by which time it's already feeling much stronger than



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By Daniel Steiger

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the 3.8. Porsche has modified the existing gearbox, and it is now even crisper and faster-shifting. It's the best dual-clutch I've ever used, which makes it about one-tenth as good as a decent manual transmission. But this car is paddles only, and my partisan views on such things do not belong here. (*Oh, but they do —Ed.*) I fookin' hate paddles.

The test car was running optional carbon-ceramic brakes (16.1-inch front, 15.4-inch rear), and they must be among the most powerful on any street-legal car. They're the final piece in the transformation over previous RS models. The front-end limitations of those cars, especially under braking, were both tire- and differential-related. With a much

The RS can play both apex scratcher and Michelin-stock-price-improving smoke weapon.

wider contact patch and now a completely variable locking rear differential that can free up on coast and allow the car to brake and turn a little, the 991 RS is miles more effective than those 997 models.

Unusually, with the extra mechanical grip comes perhaps the best-balanced, most stable 911 chassis of all. With the systems switched off, you can provoke the RS into all manner of angles, but the way it can be persuaded to rotate its hips under braking and be held with small amounts of corrective lock is astounding. Even more so when you consider the width of the rear rubber.

You can see the results of this tomfoolery in the pictures. Like all the finest RS models, the 991 can play both accurate apex scratcher and Michelin-stock-price-improving smoke weapon. It is also a heavy endorsement of the rear-engine concept, because the inherent traction is always a bonus with so much power. I cannot wait to drive this car alongside a Ferrari 458 Speciale; I think rear traction will be one of the biggest differences.

The immersive nature of this machine is best summarized by the fact that I haven't even mentioned the technical wizardry of Weissach itself. For everything but wing grip, it's a brilliant place to demonstrate a car of this type. The cambers are punishing, the surfaces change, the braking zones are harsh. Just as it's no surprise Ferraris tend to work rather well at Fiorano, you'd expect the RS to impress at Weissach, but the talent bowl is overflowing here. This is a genuinely special car.

Before the track hours, I'd driven the RS on the roads south of Stuttgart. Accepting that the 911 is a very wide car now, it's hard to reconcile the mature road manners with the nutjob I drove on the circuit. The ride is pretty good with the dampers in their softest setting, both the fixed-back carbon buckets and the sport seats are comfortable, and even the stereo is good.

Let's face it, for over a decade Porsche has owned this niche—the massively fast, enjoyable track car that can still be driven on the street. And it still does. Only a 458 Speciale comes close, but it's way more expensive. Bursting with character and ability, the 991 RS deserves the badge as much as any of its predecessors. If you have even the slimmest chance of owning one, do so. ■



THE TRACK TEST | 2015 FERRARI LAFERRARI

SEEING RED

THE LAFERRARI IS A \$1.3 MILLION, 949-HP ROCKET.
IT'S ALSO THE FASTEST CAR WE'VE EVER TESTED.

BY LARRY WEBSTER | PHOTOGRAPHY BY DEAN SMITH



IARRIVED IN MARANELLO the day after Ferrari scored its first Formula 1 win in two years. It was also the team's first victory with Sebastian Vettel, the driver the Scuderia hopes is the next Michael Schumacher. The entire town was riding the high on that Monday morning in late March, with Ferrari flags hanging everywhere. Even my airport shuttle driver was in the spirit. Speeding past Dino Ferrari High School, he smiled broadly and promised to gain back the 10 hours I'd lost while delayed at the airport.

At the end of a busy side street, gates opened and the shuttle van entered the grounds of Pista di Fiorano, Ferrari's test track. I was whisked into an old three-story house, white stucco with red shutters, mere feet from the Fiorano curbing. We went up narrow stairs to a room with a low, timbered ceiling directly over hallowed ground: Enzo Ferrari's office, perfectly preserved since his death in 1988. The floor above us contained a small apartment where Schumacher and other drivers stayed before regulations curtailed Formula 1 testing at Fiorano. Today, singer Sammy Hagar, the "I Can't Drive 55" guy and serial Ferrari owner, uses it, as do other favored *clienti*. Every Ferrari we've ever loved has roots in this structure, which makes it as much a shrine as the Vatican. Today, two engineers are delivering a sermon on the technical details of the LaFerrari.

This is not a new car. Ferrari's 949-hp hypercar debuted at the 2013 Geneva auto show, and *R&T* contributor Chris Harris drove it for last year's Supercar Issue [August 2014]. Until now, though, no outsiders have been allowed to hook up a VBOX and collect data. Ferrari tightly controls testing of all its cars, and it was especially protective of the LaFerrari. Once testing is conducted, performance becomes fact, part of the historic record.

And Ferrari is very shrewd with its history. Editor-at-large Sam Smith says that when you walk into the Fiorano compound, you feel all the things Ferrari wants you to feel. Only a

monk wouldn't. But with the \$1.3 million LaFerrari, I learned that stagecraft is superfluous. The car is incredible.

That begins with the main structure, a carbon-fiber passenger compartment formed from four different grades of cloth, hand-laid into molds and baked in Maranello's F1 facility. The engine is a 6.3-liter V-12. It revs to 9250 rpm and puts out 788 hp, among the highest horsepower per liter of any non-turbo production piston engine ever. The engine sits lengthwise behind the occupants, followed by a seven-speed dual-clutch automatic transmission and then a 161-hp electric motor.

It's easy to see hybrid supercars as a fad, a must-have trinket for wealthy collectors. (All 499 LaFerraris—only 120 will come stateside—were snapped up before the first one was even finished.) Yet Ferrari engineers are adamant that electric propulsion was added solely to make the LaFerrari quicker. The electric motor fills in where the engine is soft, which allowed the engineers to tune the V-12 for greater peak power. In addition, the motor also reduces response from the accelerator by a tenth of a second. The lithium-ion batteries, pancaked under the floor to lower the center of gravity, store 2.3 kilowatt-hours of energy. More batteries would have further improved fuel economy, which is already 75 percent better (EPA combined figure) than the 2003 Ferrari Enzo's, but the added weight would have hurt performance.

Unlike the Porsche 918 Spyder, which uses four-wheel drive to harness all of its 887 hp, the LaFerrari is rear-drive. All of the energy harvesting is done at the rear axle, under braking. That's an awful lot, even for 345-section rear tires to handle.

Front and rear aerodynamic devices constantly move to balance drag and downforce—a claimed 800 total pounds at 120 mph. Infinitely adjustable magnetorheological dampers keep the tires on the tarmac, and the adjustable stability control protects the sloppy and foolish without compromising the skilled.

The LaFerrari can run six laps of Fiorano in Race mode, which exploits all of its electric boost. (After the relatively small battery pack is depleted, the car switches into a long-run mode; this maintains battery charge and only reduces lap times by about a second.)

In the LaFerrari, factory test driver Raffaele de Simone laps Fiorano in one minute, 20 seconds, five seconds quicker than in the Enzo. The factory hotshoe is a tough act to follow, and as I was getting strapped in for my first lap, a helicopter flew overhead and landed nearby. Sergio Marchionne, Fiat Chrysler Automobiles CEO, strolled up unannounced. The engineers and mechanics stiffened. Marchionne, dressed in his



LEFT: Steering wheel has a row of shift lights on the top rim and the familiar *manettino* switch to select drive modes at bottom right. The seats are bolted to the floor. **OPPOSITE:** The LaFerrari at Fiorano.





usual dark sweater, crowed about the race win and smiled at the car. He told me not to wreck it and ambled off.

So warned, I slid into the thin shell of a seat. It's molded into the tub to avoid the weight and flex of a frame and to keep the center of gravity low. Since the seat doesn't move, the pedals are adjustable. Each owner gets custom-fitted padding. It's a bare cabin, with exposed carbon fiber and a racing-style, squared-off steering wheel.

I pressed the starter button, lighting off the V-12. A flock of birds evacuated a nearby tree. The LaF, however, was surprisingly docile at low speeds. It chugged along, wafting on the electric assist as I slowly increased my pace around the small and tight Fiorano circuit. By the fourth lap, the tires felt far grippier than in the initial few turns. So, after the tight, left-hand hairpin, I stopped at the beginning of the half-mile-long straight.

What happened next is cloudy. Launch mode (stability control off, hold the brake, press the launch button, floor the gas, and release the brake) brings engine revs to about 3000 and aggressively engages the clutch. The wheels spun for maybe half a second before the computer upshifted to second. I remember watching the speedometer increase in 10-mph gulps, a blur of flashing digits. Every upshift banged my head on the seat. The V-12 sounded as if it was always pegged at redline. A bridge that had seemed a long way off suddenly appeared overhead.

I was going well over 150 mph, which the LaF hit in just 9.8 seconds, having completed the quarter-mile in 9.7 seconds at 149.2 mph. Let's put that quarter-mile figure in context.

It's the quickest time we've ever recorded in a production car, faster than the Porsche 918 (10.0 seconds) and the Bugatti Veyron Super Sport (9.9 seconds), both of which had the advantage of four-wheel drive.

Fast, yes, but was it enough to catch de Simone? Initially, I left stability control on, but it intervened nearly every time I pressed the throttle, so I switched it off and indulged in a series of rear-end slides. They were all catchable. I can only surmise that sitting directly on the tub provided an unconscious communication that kept me from spinning. However, unless I drove like there was an egg between my right foot and the gas pedal, the rear tires simply couldn't cope.

I had watched de Simone avoid understeer by dialing just the right amount of throttle to carefully reorient the car mid-turn. He altered his style depending on the corner, sometimes relying on braking to tuck the nose during corner entry and other times quickly jabbing the gas to induce a tick more rotation.

Trouble was, I couldn't duplicate his efforts. In the long, steady-speed turns, there was gobs of grip. Driven with respect, the LaF tended to push; if I was too aggressive, the back end slid out. But the steering, brakes, and throttle all have a satisfyingly direct feel. They're sublime, like a race car's.

Everything I did, however, was too much or too little. Although I could get within a couple seconds of his time relatively easily, that last bit, the most important part, demanded extreme skill. I had near misses every other turn, wondering where my 20 years of racing and testing experience had gone.

*I remember
watching the
speedometer
increase in
10-mph gulps,
a blur of
flashing digits.*



Big isn't the only way to get versatility.

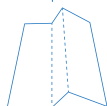


PRESSURE TO GET BIGGER IS UNRELENTING
THE NEW HUNGER MAKES CARS RESEMBLE AN R-V
CROSSEYED, WE CONCEDE THE BATTLE IS OVER

2 ➤

fold page so 1 meets 2

➤ 1



Honda reminds you to properly secure items in the cargo area.
HR-V EX-L Navi model shown. ©2015 American Honda Motor Co., Inc.





My fear—always present in these situations and a helpful deterrent to stupidity—intensified. The confidence required to pilot a car like this, the inner assurance that the upcoming turn can be taken flat out, drifted away. My slides grew sloppier. Braking became less nuanced. The trick with the LaFerrari is to drive it like an aero car: hard initial braking to use the downforce, then trail off at turn-in. It's closer to driving an LMP car than, say, a 458 Speciale. After a half dozen laps, the rear tires were cooked, sliding around like they were on marbles. My time was up.

There's a lot of talk nowadays about how civilized sports cars

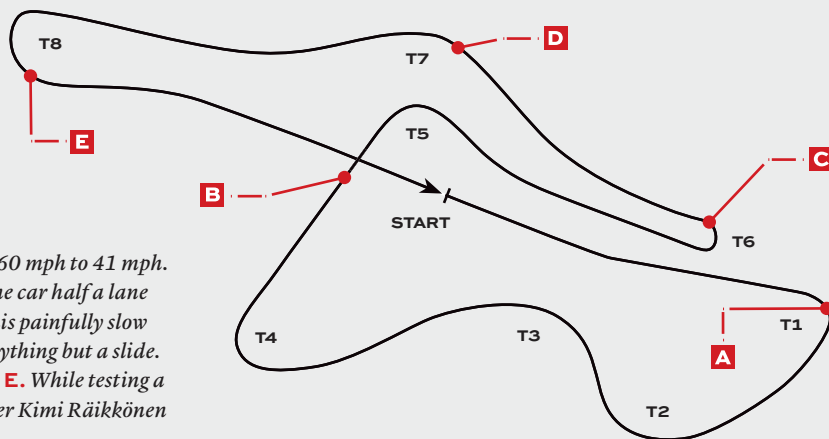
have become. How modern tires and electronic systems have insulated drivers from the delicate touch that was once required. The LaFerrari stands that notion on end. To be quick, it demands a style that's both aggressive and delicate. An amazing amount of speed is available to even modestly skilled drivers, and the electronics provide a safety net. But only the truly skilled can deploy all it offers.

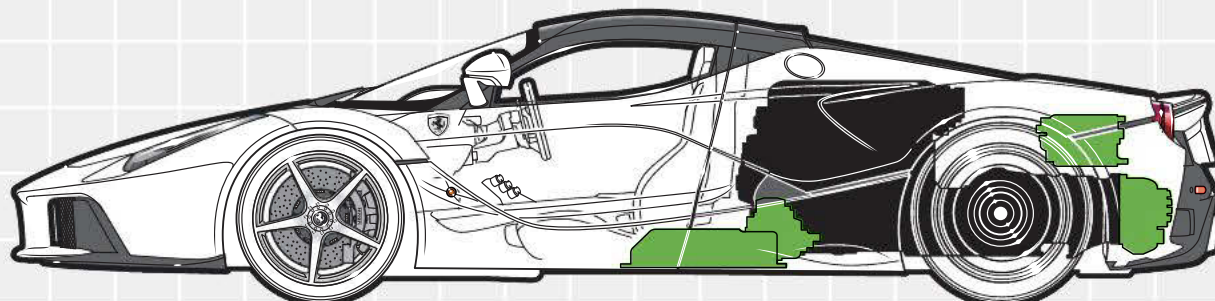
Every exotic car should have a tinge of risk. It's impossible to quantify—a VBOX can't measure it. But take the LaFerrari where it wants to go, for those extra few seconds, and the fangs come out. And that's exactly how it should be. ■

PISTA DI FIORANO | MARANELLO
 BUILT 1972 | 1.9 MILES | 8 TURNS
 LAP RECORD: 0:55.999
 (MICHAEL SCHUMACHER,
 FERRARI F2004 F1 CAR, 2004)

TRACK NOTES

A. This tight right-hander required slowing from 160 mph to 41 mph. Aero aids helped. **B.** A pavement joint here threw the car half a lane to the right. I didn't breathe again for a week. **C.** This painfully slow hairpin—22 mph—is all but impossible to exit in anything but a slide. **D.** In just 700 feet, the LaF accelerates to 110 mph. **E.** While testing a LaFerrari prototype in early 2014, Ferrari F1 driver Kimi Räikkönen spun exiting this turn.





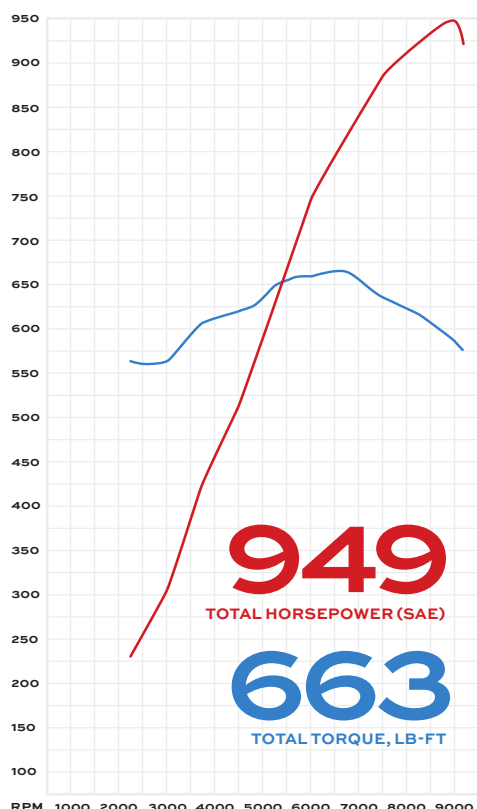
SPECIFICATIONS

PRICE

AS TESTED \$1,322,712

POWERTRAIN

LAYOUT mid, longitudinal
CONFIGURATION hybrid V-12
INDUCTION naturally aspirated
MATERIAL aluminum block and heads
VALVETRAIN DOHC, 48 valves
DISPLACEMENT 6262 cc
BORE x STROKE 94.0 x 75.2 mm
COMPRESSION RATIO 13.5:1
PEAK ENGINE POWER 789 hp @ 9000 rpm
PEAK ENGINE TORQUE 516 lb-ft @ 6750 rpm
REDLINE 9250 rpm
FUEL DELIVERY direct injection
HYBRIDIZATION 161-hp, 199 lb-ft
transmission-mounted motor/generator
BATTERY 2.3-kWh lithium-ion



TRANSMISSION

TYPE 7-speed dual-clutch automatic, RWD
FINAL-DRIVE RATIO 4.38:1, locking differential
GEAR RATIO MAX SPEED (RPM)
1 3.08:1 58 mph (9250)
2 2.19:1 81 mph (9250)
3 1.63:1 109 mph (9250)
4 1.29:1 138 mph (9250)
5 1.03:1 172 mph (9250)
6 0.84:1 211 mph (9250)
7 0.69:1 217 mph (7825)

STEERING

ASSIST electric
RATIO 11.3:1
TURNS, LOCK-TO-LOCK 1.8
TURNING CIRCLE 38.1 ft

SUSPENSION

FRONT control arms
REAR multilink

BRAKES & TIRES

FRONT 15.7-in vented rotors,
6-piston fixed calipers
REAR 15.0-in vented rotors,
4-piston fixed calipers
TIRES Pirelli P Zero Corsa Asimmetrico
SIZE F 265/30R-19 R 345/30R-20

BODY & CHASSIS

CONSTRUCTION monocoque
MATERIALS carbon fiber and Kevlar
LENGTH 185.1 in
WIDTH 78.4 in
HEIGHT 43.9 in
WHEELBASE 104.3 in
TRACK F/R 66.2/63.5 in
DOORS/SEATS 2/2
EPA CLASS 2-seater
CARGO CAPACITY —
DRAG COEFFICIENT x FRONTAL AREA —

WEIGHT

CURB WEIGHT 3485 lb
DISTRIBUTION FRONT/REAR 39/61%
WEIGHT-TO-POWER 3.7 lb/hp

FUEL

EPA CITY/HWY 12/16 mpg
CAPACITY 22.7 gallons
RANGE 363 miles
RECOMMENDED FUEL GRADE premium

TEST RESULTS

2.4

0-60 MPH, SECONDS

9.7

0-1/4-MILE, SECONDS @ 149.2 MPH

217

TOP SPEED,
MPH (MFR)

1.16

g

ROADHOLDING,
300-FT SKIDPAD

1 FOOT (ROLLOUT)	0.2 sec
60 FEET	1.6 sec
ROLLING START, 5-60 MPH	3.0 sec
1/4-MILE	9.7 sec @ 149.2 mph
0-10 MPH	0.2 sec
0-20	0.6
0-30	1.1
0-40	1.5
0-50	1.9
0-60	2.4
0-70	2.9
0-80	3.4
0-90	4.0
0-100	4.7
0-110	5.5
0-120	6.4
0-130	7.4
0-140	8.5
0-150	9.8
TOP SPEED (REDLINE-LIMITED, MFR)	217 mph

BRACING

60-0 MPH 104 ft
80-0 MPH 181 ft
FADE none

HANDLING

ROADHOLDING 1.16 g
BALANCE neutral

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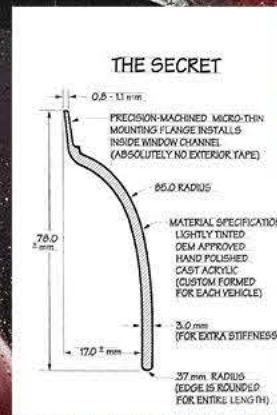
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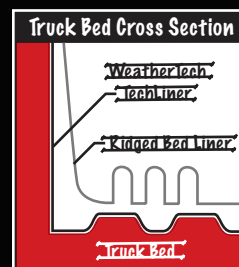
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THE FIRST DRIVE | 2015 RANGE ROVER SPORT SVR

AMPLIFIED

LAND ROVER'S NEW IN-HOUSE SPEED SHOP TURNS UP THE RANGE ROVER SPORT.





T HIS STORY BEGINS WITH FOUR MEN dragging me into the woods behind a racetrack in upstate New York to prove a point. We are inside a very large, very luxurious automobile. Money is being discussed. Promises are being made. I am driving the Range Rover Sport SVR, the fastest Land Rover in history, a truck that circles the Nürburgring quicker than the last-gen Porsche Cayman S. We're going 9 mph.

Tree stumps. Buggy ruts. Rock piles. The Range Rover shrugs them off, the four-wheel-drive equivalent of an all-pro fullback lumbering through an all-dwarf defensive line. This, says Stuart Adlard, is why I cannot have competition-style composite brakes.

"They'd probably help around the Nordschleife," he admits, "but carbon-ceramics don't react well to sand and mud."

Adlard is clever like that. He's a lead engineer at Special Vehicle Operations, or SVO, Jaguar Land Rover's fledgling in-house skunkworks program. Think of it like AMG, but with half the employees, longer waiting lists, and a stiffer upper lip. The team's first concept car, Project 7, showed up last year. It has no roof, meatballs on the doors,

and 177 percent more downforce than the F-type on which it's based. So, yeah, these folks like to party.

SVO is divided into five departments: interior, exterior, electronics, chassis, and powertrain. Capital-S special vehicles come down the main production line at Solihull, England, assembled to spec with certain components missing. Members of each SVO department then install capital-S special parts in their place.

The Range Rover Sport SVR is the firm's debut product. JLR's supercharged 5.0-liter V-8 is here, pushing more boost and retuned for 550 hp and 502 lb-ft of torque. That runs through a ZF eight-speed automatic, tweaked to provide rev-matched downshifts and upshifts 50 percent quicker than a Range Rover Sport. The SVR's 162-mph top speed is achievable in sixth and seventh gears.

More? More. The SVR weighs 5150 pounds and generates 1.0 g of lateral grip. It does 0-60 mph in 4.5 seconds and laps the Nordschleife in 8 minutes, 14 seconds. (Adlard, feigning modesty: "To be honest, it happened by accident. We calculated an estimated time, in this case eight minutes and 22 seconds, then ran continuously within five percent of that for durability tests. We got the data

Range Rover Sport SVR

PRICE \$111,470
POWERTRAIN
 5.0-LITER SUPERCHARGED V-8, 550 HP, 502 LB-FT; AWD, 8-SPEED AUTOMATIC
WEIGHT 5150 LB
0-60 MPH 4.5 SEC
TOP SPEED 162 MPH
EPA CITY/HIGHWAY 14/19 MPG (EST)
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back, and it was 8:14. We said, ‘Wow, that’s bloody quick.’”)

What’s impressive is how little civility has been sacrificed. The SVR’s most conspicuously sporty addition, pairs of Recaro-esque leather buckets front and rear, are just as comfy as the base seats. It has the classic Land Rover periscope driving position, the same blocky four-post steering wheel. With 21-inch wheels, rejiggered air springs, firmer magnetorheological dampers, and stiffer rear bushings, ride quality is stellar. There are exterior flourishes here and there (badging, redesigned bumpers, quad exhaust pipes), but they’re hardly noticeable. Which is a good thing, because the Range Rover Sport already looks the business.

Driving the SVR at Monticello’s 1.6-mile south course is . . . an experience. Pitch and roll is minimal, the stuff of legit sport sedans. Squat and dive, meanwhile, is somewhere between a late-model Mustang and a seesaw. The electric steering is delicate and direct, yet the SVR always seems to be brawling and smashing and pushing its way through an apex. Outrunning your two-and-a-half-ton shadow isn’t easy, even with brake-based torque vectoring and 275-section Continental performance tires. That combination provides loads of grip, until a big throttle lift while stability control is in Dynamic mode. Then there’s some oversteer. Also, the exhaust is *loud*. And fantastic. So, as you’re sloshing fore and aft, but not side to side, bullying

over curbing and minding the tail end, the SVR is singing like an Aussie V8 Supercar with laryngitis.

If this all seems like a hilarious, incongruous way to get around a circuit, that’s because it was. Then the brakes started getting hot, which is why I ended up being dragged into the woods. Point made.

The difference between the Range Rover Sport SVR and the Porsche Cayenne Turbo or BMW X6 M is fundamental: It’s a truck made to behave like a car, not the inverse. The SVR still offers two transfer-case speeds, six off-road terrain settings, seven-plus inches of adjustable ride height, 10-plus inches of wheel travel, and a max wading depth of 33.5 inches. Approach, departure, and breakover angles are suitable for scaling a prison wall. When I suggested that the Porsche-beating Ring time might include a beeline through the Karussell, or perhaps a grassy shortcut from Flugplatz to gantry, Adlard just smiled.

Here, the idea was to crank Land Rover’s performance knob as high as possible without sacrificing off-road capability. The Sport Supercharged was already a howitzer, and the SVR is simply more. More noise, more fast. More Range Rover. Better? Sure, but not in ways anybody needs or will ever actually exploit.

This one just goes to eleven.

The SVR isn’t as agile as a BMW X6 M but is far better off-road. Not pictured: raucous exhaust sound.

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THE FIRST DRIVE | 2015 RAM 1500 REBEL

THE ROUSER

A LIFT, MEATY TIRES, AND ALL THE ATTITUDE YOU CAN STAND.

IT DOESN'T TAKE MUCH to turn a half-ton pickup into a minor off-road brawler. A small lift, meaty tires, and a little armor transforms any Home Depot drone into a back-country rig. The 2015 Ram Rebel builds on a long tradition of putting the right parts in the right places, converting the standard Ram 1500 into a truck built for the hills.

The Rebel is an answer to machines like the Ford F-150 FX4 and Chevrolet Silverado Z71. But where those more street-oriented rivals rely on mall-terrain tires and bumpers dressed in chrome or, worse, paint, Ram brings legitimate hardware.

There are two engines: a 3.6-liter V-6 with 305 hp and 269 lb-ft of torque or a 395-hp 5.7-liter V-8 with 410 lb-ft of torque. Trucks equipped with the six are only available with four-wheel drive and a new 3.92:1 final-drive ratio. Go for the big eight and you get additional options, including two-wheel drive and more efficient 3.21:1 diffs. Both engines are bolted to an eight-speed automatic transmission.

The Rebel ditches the familiar crosshair grille for a more aggressive snout. A sculpted aluminum hood adds more menace to the mix, as do powder-coated steel bumpers and Power Wagon fender flares. New red accents, Rebel badging, and tread-pattern vinyl seats make for a sharp cabin.

Ram's air-ride suspension is standard on the Rebel, and it sits one inch higher. A set of spec-

cifically tuned Bilstein monotube dampers complements the ride height. That extra inch of lift does more for the truck's visual presence than its off-road prowess, but the 33-inch Toyo Open Country A/T tires give the Rebel some teeth off tarmac. Wrapped around new 17-inch alloy wheels, they're as quiet on road as they are capable in sand, snow, and mud. Standard aluminum skid plates protect the truck's soft spots underneath.

Engineers slowed the Rebel's steering ratio and tweaked the sway bars for better off-road control, and the coil-spring rear suspension soaks up washboards and pockmarked dirt roads. Old-school leaf-spring pickups go where you point them, but whether your kidneys make the trip is another matter. The Rebel gets you where you're going, internal organs and all.

That's not to say it's a proper hellion. It takes constant vigilance and a series of button mashes to keep the onboard nannies at bay. Give us easy defeats for stability and traction control, and we'd be happier.

Yet the Rebel is a truck that's always glad to surprise you with its capability. It will grin and knock that angel off your shoulder, encouraging you to lay tracks in virgin snow or scramble up that impossible hill climb. For those of us who spent our youths bashing across fields and picking through forests in a beater with a bed, the Rebel is a familiar accomplice. —ZACH BOWMAN

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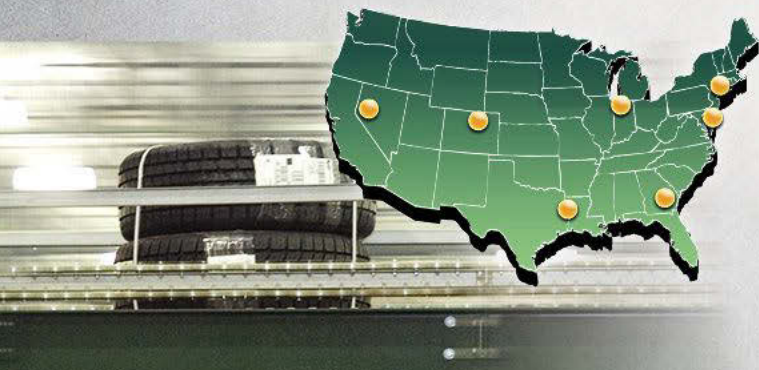
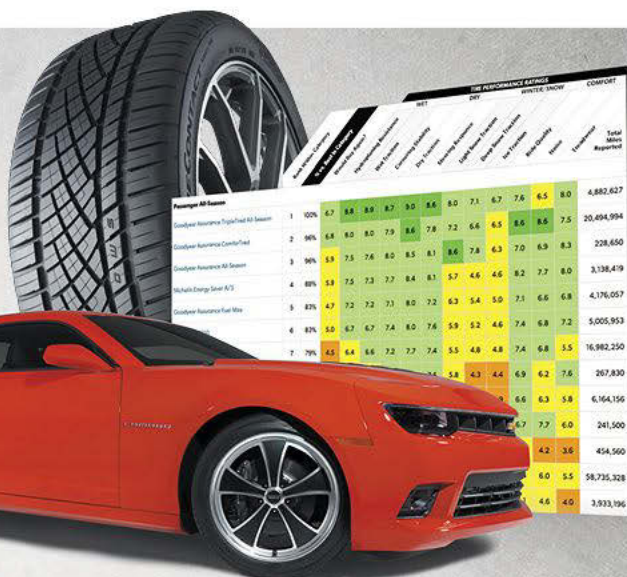
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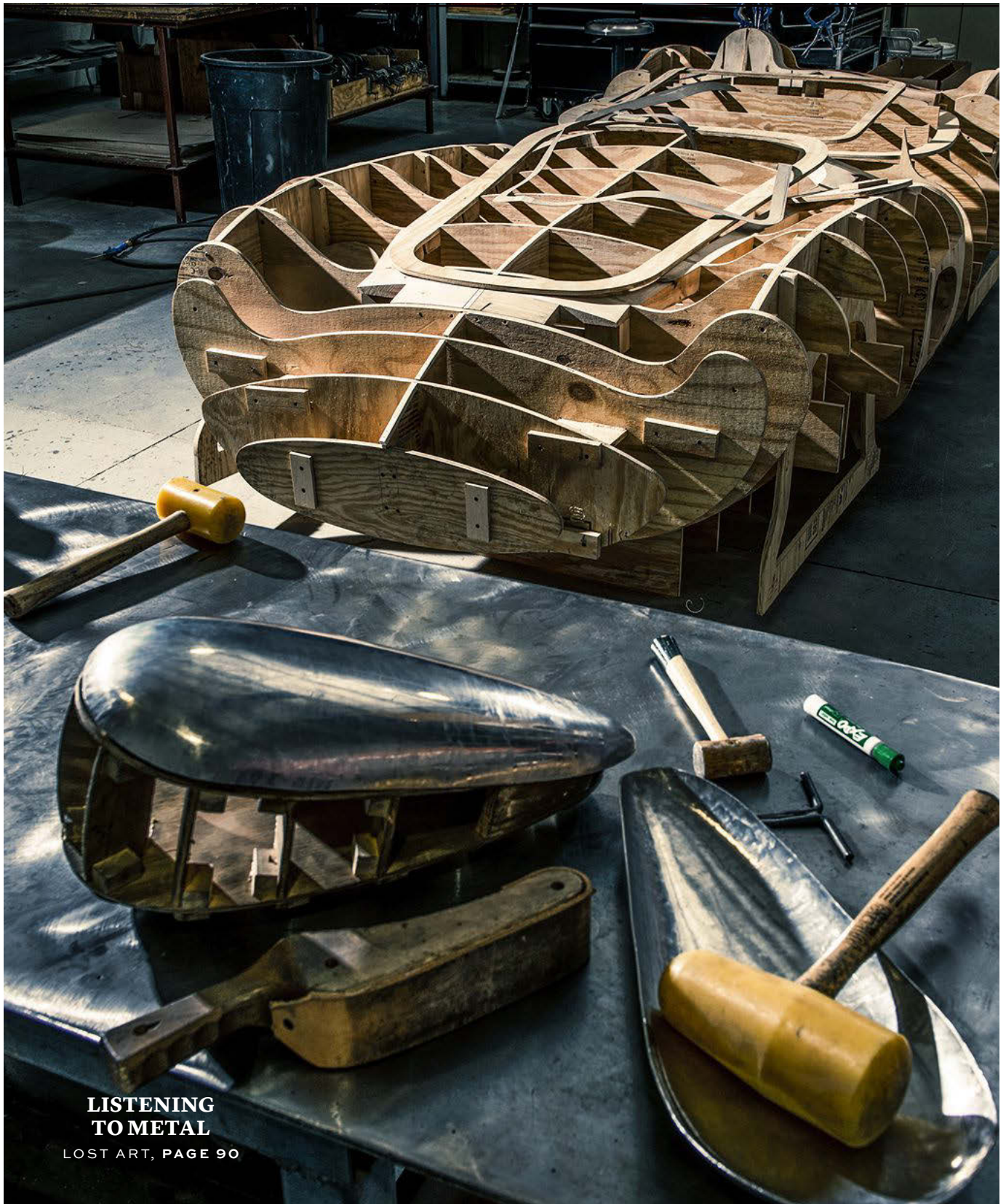


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**LISTENING
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LOST ART, PAGE 90

LOST ART BY SAM SMITH

THE ENGLISH WHEEL

HOW TWO HANDS AND AN OLD-WORLD TOOL MADE SOME OF THE SEXIEST CAR BODIES IN HISTORY.

Americans call it an English wheel, but the English call it a wheeling machine. It's technically a rolling hammer—two steel drums that can form sheetmetal into complex curves. In the wrong hands, an English wheel can turn a flat piece of alloy into sine-waved trash. In the right ones, it can make the fender of a Ferrari 250 Testa Rossa in a few hours. Or just about anything else you can build from curved metal.

Legend holds that the first wheeling machines appeared in medieval France. They supplanted part of traditional blacksmithing, where men used mallets and shot bags to pound out flat armor or coachwork. The American name came in the 20th century, when the tool pollinated here from English panelbeaters. It had a brief affair with mass production, but the machine's flexibility and skill demand made it perfect for low-volume work. Wheels helped birth early grand-prix cars, Bonneville record setters, most of Europe's classic sports racers, and many of history's great aircraft. Versions still shape NASCAR bodies and new Morgans, and they're the backbone of countless custom and restoration shops.

The English wheel has a reputation as a black art, the stuff of British cottages. To better understand it, we visited Fournier Enterprises, in Michigan's Shelby Township. Founder Ron Fournier worked for stock-car legends Holman and Moody in the early 1960s, then Penske Racing and Indianapolis maven A. J. Foyt. Four decades ago, he launched a series of revolutionary books and videos that helped spread the old-school fabrication technique. In addition to custom metalwork, his business puts on practical classes and sells a small line of tools.

When I met Jeff Fournier, Fournier's shop chief, he walked me past an Aston Martin DBR1/2 body buck—a 1950s Le Mans car in plywood—and toward several large English wheels, frames as tall as a grown man, under bright lights. In 90 minutes, as photographer Andrew Trahan and I watched, Fournier turned a sheet of annealed 3003 aluminum into half of a gas tank for a Norton motorcycle. The process involved little more than a nylon mallet, a plywood buck, a leather-and-wood "slapper" shrinking tool, and an English wheel.

The piece, three-dimensional and achingly pretty, ►







Time, pressure, and two hands: Jeff Fournier shapes and planishes a piece of sheet aluminum on an English wheel.

materialized in Fournier's hands as if by magic.

Trahan raised an eyebrow. "He's a metal-shaping Jesus."

Jeff glanced at me, laughing. "Wanna make the other half?"

It was like being handed an ax and told to chop down a forest: You know what to do, but the destination seems impossible. So you take it one step at a time.

Learning the English wheel, Jeff said, means understanding the four things you can do to sheetmetal: cutting, bending, shrinking, and stretching. And the difference between form and shape. Forming a piece of aluminum is bending it over your knee, easily reversible. Shaping involves a shrink or a stretch, and takes work to undo. (Molecularly speaking, shrinking compresses the space inside a piece of steel, while stretching expands it. Precision for each requires dedicated tools.)

The wheel is a stretching machine. Its polished steel rollers, called anvils, run parallel, in bearings, on each leg of a C-shaped frame. The frame is made of steel or cast iron and is either very heavy or bolted to something that is.

The anvils look like paperweights and are correspondingly hefty. They come in different contours and are adjustable for height, depending on the shape you're trying to produce. By walking metal back and forth between them, you stretch it, producing a simple curve. Change angle and put the same piece back in the wheel, you can make a compound curve. Change anvil height, and you can planish, smoothing out dimples or

hammer marks. Given enough time, a wheel's pressure can polish metal to a mirror finish, no chemicals.

The process is quiet, repetitive, and undramatic—a wheel in use reminds you of meat being sliced in a deli, or maybe someone vacuuming a floor. It's also counterintuitive: You use the light, reflecting off the metal's rises and hollows, to improvise a course of work, but everything must be planned several steps in advance. You run the anvils without lubricant, because their pressure would embed oil in your work. And while most wheel mistakes can be undone (usually on a wheel), there's a clock—every pass you make changes the piece, and too many can divot or work-harden your project.

Above all, it's more difficult than it looks. A metal's hardness and alloy makeup is key, and in action, the stuff seems alive. Two pieces of identical aluminum can take different wheel moves to produce the same result.

"The metal will tell you what to do," Jeff said. "You just have to listen. A lot of it is understanding surface—some of our best students are painters. You don't want to do the wrong thing, or the right thing too soon."

For the record, until Jeff helped me fix it, my Norton tank half appeared to have been backed over by a dump truck. His hands moved surely, erasing my errors. I found myself wishing my fingers to work like his, suddenly willing to put years into getting them there. And while I was never much of a painter, that doesn't make a master's work any less obvious. Or the timeless elegance of his tools. ■

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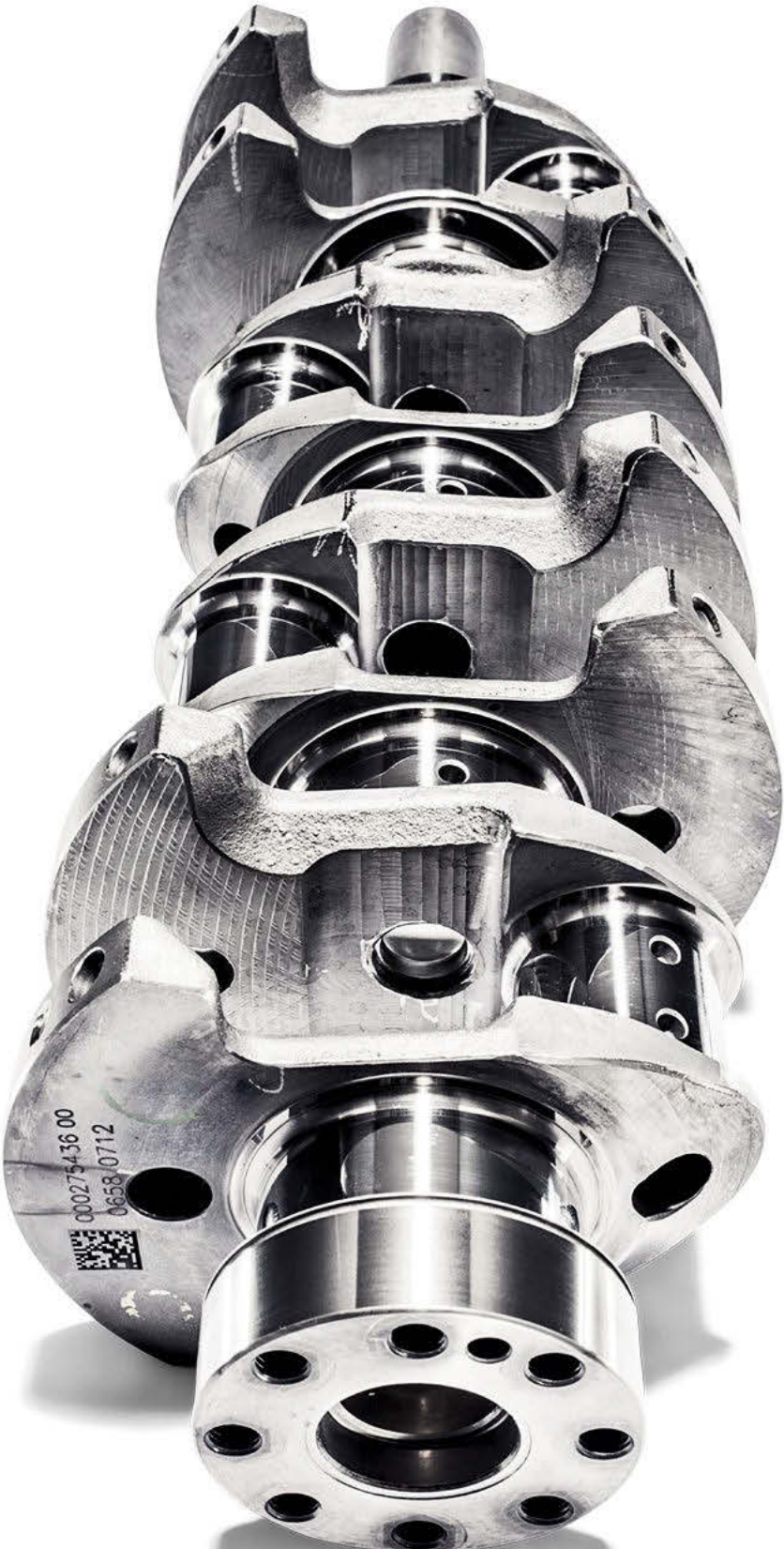


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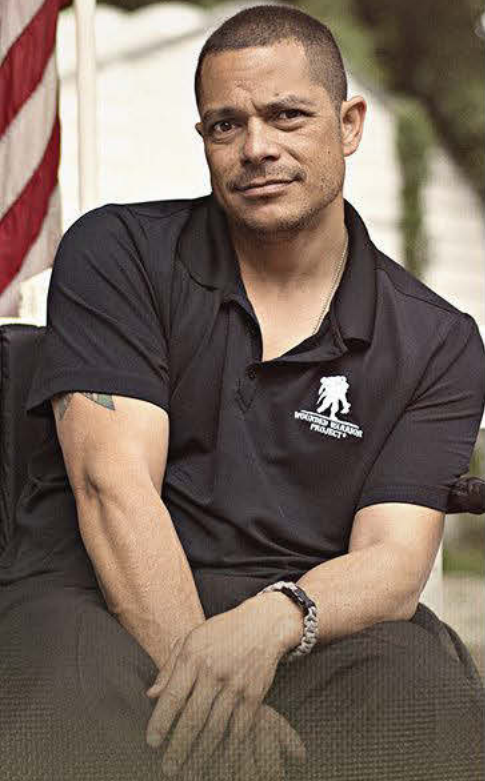
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We thought Ferrari found the limit in the 458 Italia—which is being replaced by the turbo 488 GTB—but the 5.2-liter monster in Ford's forthcoming Shelby GT350 Mustang will swing to 8250 rpm. Check your pulse.

—ZACH BOWMAN

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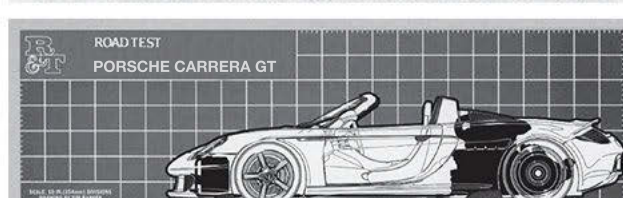
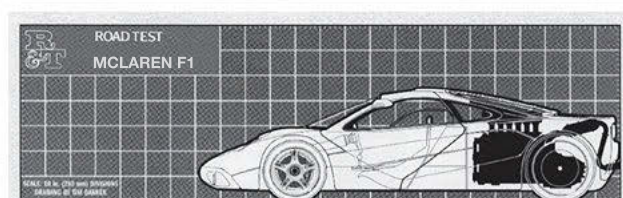
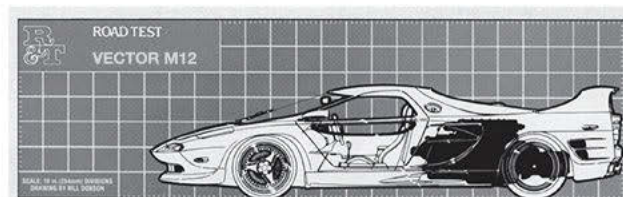
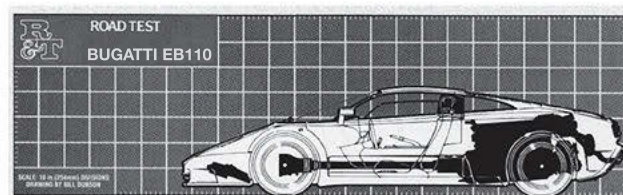
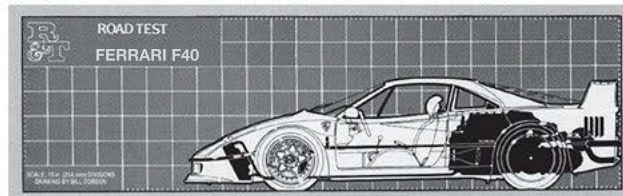
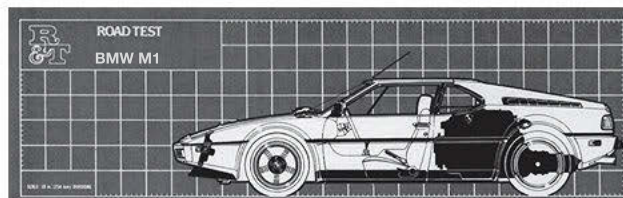
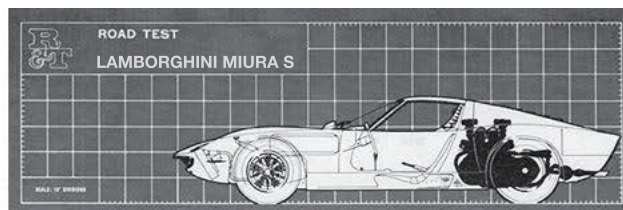
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Lamborghini Miura S (4/70)	V-12	430	330	2905	5.5	13.9 @ 107.5	168	-	-
Lamborghini Countach (2/76)	V-12	375	266	3020	6.8	14.4 @ 105.5	192	140	0.84
Ferrari 512 Berlinetta Boxer (3/78)	H-12	360	333	3615	5.5	14.2 @ 103.5	188 ¹	140	0.85
BMW M1 (9/80)	I-6	235 ¹	243 ¹	3325	6.2	14.5 @ 97.0	156	156	0.86
Lamborghini Countach S (2/82)	V-12	325	260	3170	5.7	14.1 @ 104.0	150	131	0.87
De Tomaso Pantera GT5 (6/84)	V-8	350	333	3250 ¹	5.5	14.0 @ 99.5	137	143	-
Ferrari GT0 (8/84)	V-8t	400	366	2555	5.0	14.1 @ 113.0	189	-	-
Lotus Turbo Esprit (6/86)	I-4t	215	194	2750	5.6	14.3 @ 99.0	152	145	0.83
Vector W8 Twin-Turbo ³ (3/91)	V-8tt	625	630	3320 ¹	4.2	12.0 @ 124.0	218 ¹	145	0.97
Lamborghini Diablo (8/91)	V-12	492	428	3620 ¹	4.5	13.3 @ 114.0	202 ¹	142	0.91
Ferrari F40 (10/91)	V-8tt	478	425	2980 ¹	3.8	11.8 @ 124.5	196	119	0.94
Bugatti EB 110 (7/94)	V-12	611	480	3940	4.4	12.5 @ 119.5	207 ¹	112	0.99
Lamborghini Diablo VT (12/94)	V-12	492	428	3865	4.7	13.2 @ 112.5	202 ¹	116	0.87
Vector M12 (9/96)	V-12	490	425	3600 ¹	4.8	12.8 @ 114.5	190 ¹	144	0.92
Ferrari F50 (1/97)	V-12	513	347	2710 ¹	3.6	12.1 @ 124.5	202	136	-
McLaren F1 (12/97)	V-12	627	479	2840	3.4	11.6 @ 125.0	231 ¹	127	0.86
Porsche Carrera GT (6/04)	V-10	605	435	3530 ¹	3.6	11.3 @ 131.6	205 ¹	124	0.99
Mercedes-Benz SLR McLaren ³ (7/05)	V-8s	617	575	3860 ¹	3.5	11.5 @ 126.1	207 ¹	107	0.97
Spyker C8 Spyder (3/07)	V-8	400	354	2985	4.4	12.7 @ 112.0	-	120	0.92
Ferrari 599 GTB Fiorano F1 ³ (5/07)	V-12	611	448	3865	3.2	11.2 @ 129.3	205 ¹	109	0.97
Lamborghini Gallardo Superleggera ³ (11/07)	V-10	522	376	3320	3.4	11.7 @ 121.3	195	114	0.98
Alfa Romeo 8C Competizione ³ (1/08)	V-8	450	354	3495 ¹	4.2	12.4 @ 115.4	181	105	1.02
Lamborghini Murciélago LP 670-4 SuperVeloce ³ (11/09)	V-12	670	487	3660 ¹	2.8	10.9 @ 129.4	209 ¹	114	0.97
Chevrolet Corvette ZR1 (6/10)	V-8s	638	604	3365	3.5	11.5 @ 128.7	205	112	1.04
Bugatti Veyron 16.4 Super Sport ³ (11/11)	W-16qt	1184	1106	4545	2.5	9.9 @ 145.8	258 ²	124	0.99
Lamborghini Aventador LP 700-4 ³ (5/12)	V-12	691	509	3795	2.7	10.4 @ 136.0	217	108	1.05
McLaren MP4-12C ³ (10/12)	V-8tt	592	443	3270	3.0	10.9 @ 131.7	204	114	1.03
Mercedes-Benz SLS AMG Black Series ³ (12/13)	V-8	622	468	3716	3.2	11.1 @ 129.3	196 ¹	107	1.01
Porsche 918 Spyder ³ (8/14)	V-8h	887	-	3820	2.5	10.0 @ 143.7	214	108	1.07
Ferrari 458 Speciale ³ (10/14)	V-8	597	398	3199	3.0	11.1 @ 125.7	202	102	1.01
Ferrari LaFerrari ³ (8/15)	V-12h	949	663	3485	2.4	9.7 @ 149.2	217	104	1.16



LEGEND For **ENGINE TYPES**, I is an inline design; H is a horizontally opposed, or flat, design. V, VR, and W describe cylinder configurations; the number following the letter is the number of cylinders. An additional letter, a "t" or an "s," designates turbo- or supercharging; "tt" is twin turbo; "qt" is quad turbo; "d" designates diesel; "h" designates hybrid. "FC" designates fuel cell; "EV" designates an electric vehicle. **--- leader in that category.** **YELLOW** = new entry, 'estimated; 'electronically limited; 'automatic/automated transmission. **ACCELERATION** is measured with one foot of rollout subtracted. **TOP SPEED** is typically as reported by the manufacturer, but we occasionally measure or estimate it. **BRAKING** distances are measured from the beginning of pedal depression to a complete stop. **ROADHOLDING** is the average cornering grip measured around a full skidpad lap in each direction. DATA APPLIES TO THE MODEL AT THE TIME (ISSUE DATE) OF TESTING.

R&T OFFICIAL TEST RESULTS ARE MARKED IN BLUE.

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BY BOB LUTZ

Dear Bob,

I would like your opinion on the switch to low-profile tires. I believe it was a big mistake. Sitting in the back seat of a car equipped with them is like riding in a truck. Some say they look better, but I think they look like 1910 wheels with hard rubber tires. How could an entire industry make such a blunder?

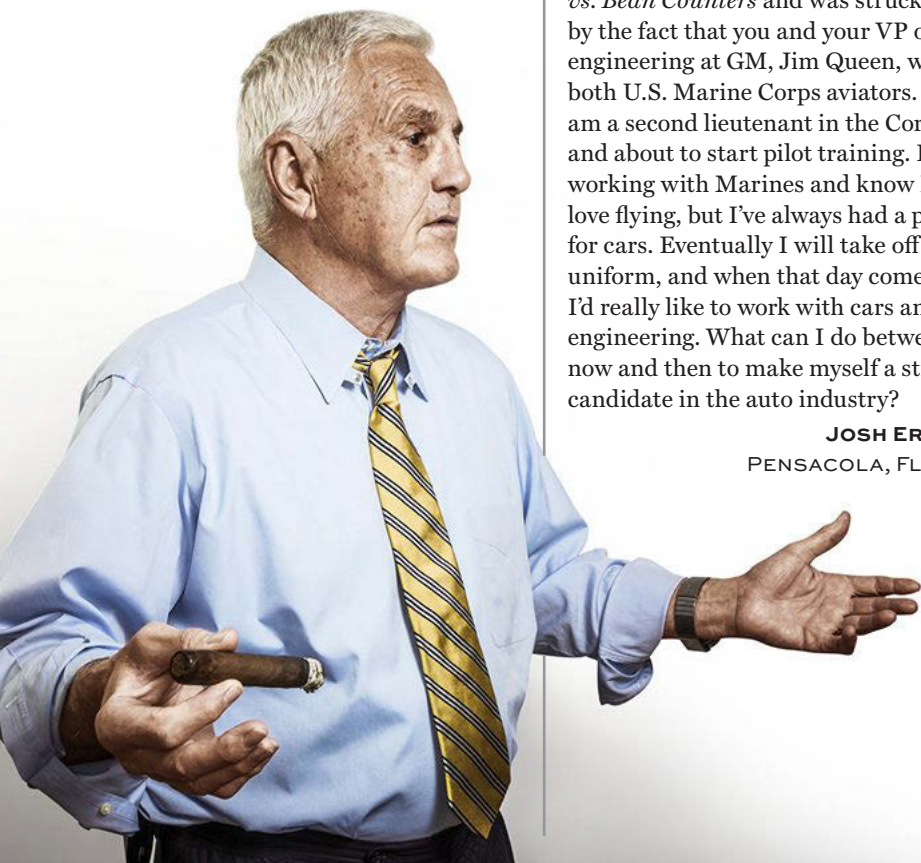
JERRY BRUECKER,
KAUKAUNA, WISCONSIN

Well, J.B., most people, including me, think they look cool. The low-profiles started on European sports models and became fashionable. They provide a firmer ride, much in favor these days, despite the state of our

undermaintained roads. There's no question that these tires aid handling, agility, and turn-in. They are good for your overall health, much like a hard mattress. Learn to love them.

I recently read your book *Car Guys vs. Bean Counters* and was struck by the fact that you and your VP of engineering at GM, Jim Queen, were both U.S. Marine Corps aviators. I am a second lieutenant in the Corps and about to start pilot training. I love working with Marines and know I'll love flying, but I've always had a passion for cars. Eventually I will take off the uniform, and when that day comes, I'd really like to work with cars and engineering. What can I do between now and then to make myself a stronger candidate in the auto industry?

JOSH ERNISSE
PENSACOLA, FLORIDA



Great career start, Josh. Get your wings, perform your active duty, continue self-education on cars and the car business. When you're released from active duty, get an MBA from a reputable university. It won't make you any "better"; it's merely a good way to get your foot in the door. Your USMC training, focus, discipline, and leadership skills will ensure success. Semper fidelis.

Why didn't Chevy get the Solstice/Sky when Pontiac and Saturn folded? Chevy was without a small drop-top since the early 2000s, leaving the Corvette as the only convertible in the lineup.

LARRY MAPPS
NAVARRE, FLORIDA

Yes, product-wise, it would have made a lot of sense, and we did have a couple of Chevy-badged Skys around. They looked perfect with the bow tie. Trouble is, the cars were built in a plant that was way oversized and thus inefficient. Moving the tooling and equipment to some other location would have been prohibitively expensive. Sidebar: The Corvette guys hated the idea, fearing that a Chevrolet Kappa car would steal Corvette sales.

Why do nearly all cars today have those painted plastic grille and bumper abominations? I surmise that they were conceived some years ago, with no paper trail, in a smoke-filled room (cigars) such that the only benefactors are automakers and auto-body shops.

OWEN EDWARDS
PORT MOODY, BRITISH COLUMBIA

Don't blame that on us cigar smokers, Owen. The flexible composite so-called fascias (usually with an integrated grille) are a result of the feds mandating 5-mph bumper systems. Done conventionally, a few decades ago, they were beyond ugly. Remember how they ruined MGs and E-type Jags? But covering the foam beams and energy-absorbing hardware under a bounce-back-styled envelope provided a great solution: cars that appeared to have no bumpers, which were always the bane of designers.

Bob Lutz has been The Man at several car companies, so your problems are cake. Bring 'em on.

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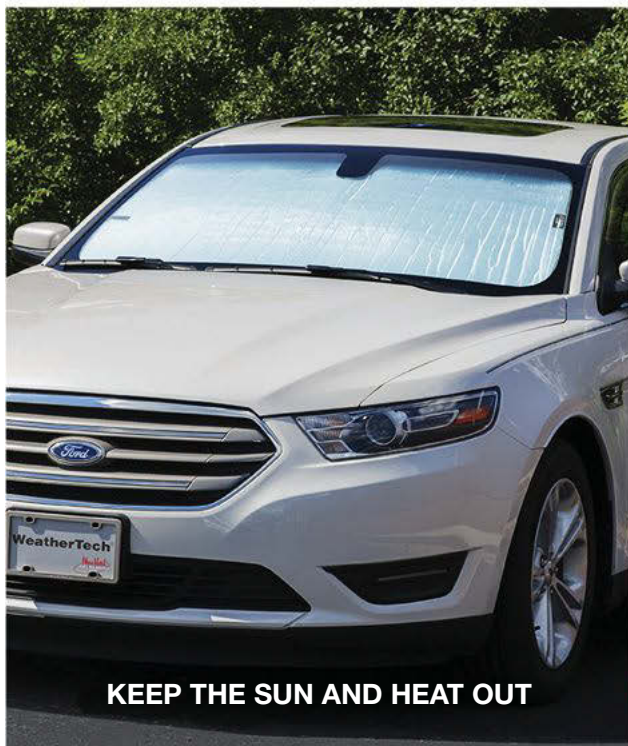
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